

TOSHIBA

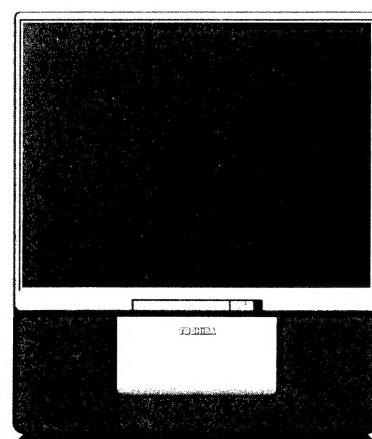
FILE NO. 010-9517

SERVICE MANUAL

COLOUR TELEVISION

F5SS Chassis

48PJ5UE, 48PJ5UH
48PJ5UC



X-RAY RADIATION PRECAUTION

1. Excessive high voltage can produce potentially hazardous X-RAY RADIATION. To avoid such hazards, the high voltage must not be above the specified limit. The nominal value of the high voltage of this receiver is 31.5 kV at zero beam current (minimum brightness) under a 220V AC power source. The high voltage must not, under any circumstances, exceed 32.0 kV. Each time a receiver requires servicing, the high voltage should be checked following the HIGH VOLTAGE CHECK procedure in this manual. It is recommended that the reading of the high voltage be recorded as a part of the service record. It is important to use an accurate and reliable high voltage meter.
2. This receiver is equipped with a Fail Safe (FS) circuit which prevents the receiver from producing

an excessively high voltage even if the B+ voltage increases abnormally. Each time the receiver is serviced, the FS circuit must be checked to determine that the circuit is properly functioning, following the FS CIRCUIT CHECK procedure in this manual.

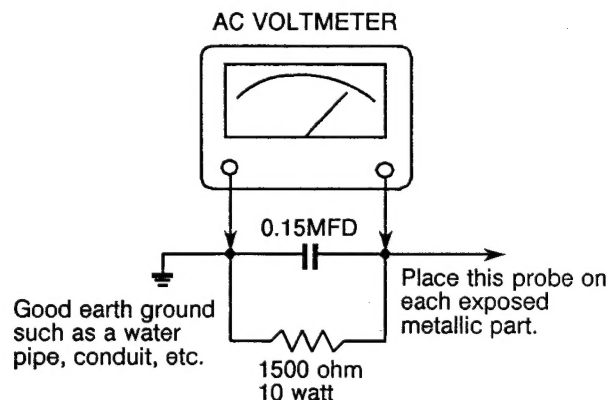
3. The only source of X-RAY RADIATION in this TV receiver is the picture tube. For continued X-RAY RADIATION protection, the replacement tube must be exactly the same type tube as specified in the parts list.
4. Some part in this receiver have special safety-related characteristics for X-RAY RADIATION protection. For continued safety, parts replacement should be undertaken only after referring to the PRODUCT SAFETY NOTICE below.

SAFETY PRECAUTION

WARNING : Service should not be attempted by anyone unfamiliar with the necessary precautions on this receiver. The following are the necessary precautions to be observed before servicing this chassis.

1. An isolation Transformer should be connected in the power line between the receiver and the AC line before any service is performed on the receiver.
2. Always discharge the picture tube anode to the CRT conductive coating before handling the picture tube. The picture tube is highly evacuated and if broken, glass fragments will be violently expelled. Use shatter proof goggles and keep picture tube away from the unprotected body while handling.
3. When replacing a chassis in the cabinet, always be certain that all the protective devices are put back in place, such as; non-metallic control knobs, insulating covers, shields, isolation resistor-capacitor network etc.
4. Before returning the set to the customer, always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as antennas, terminals, screwheads, metal overlays, control shafts etc. to be sure the set is safe to operate without danger of electrical shock. Plug the AC line cord directly into a 220V AC outlet (do not use a line isolation transformer during this check). Use an AC voltmeter having 5000 ohms per volt or more sensitivity in the following manner:

Connect a 1500 ohm 10 watt resistor, paralleled by a 0.15 mfd, AC type capacitor, between a known good earth ground (water pipe, conduit, etc.) and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of 1500 ohm resistor and 0.15 mfd capacitor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part. Voltage measured must not exceed 0.3 volts RMS. This corresponds to 0.2 milliamp. AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.



PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the international hazard symbols on the schematic diagram and the parts list.

Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire, X-ray radiation or other hazards.

INTRODUCTION

Before Installation

To identify your TV

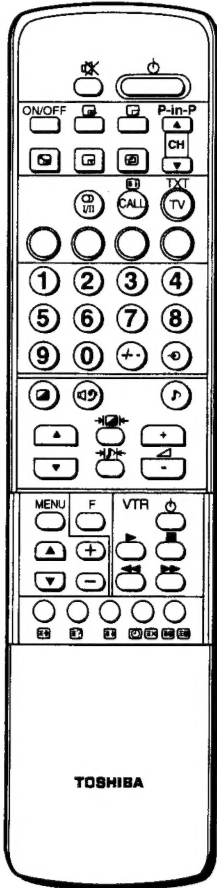
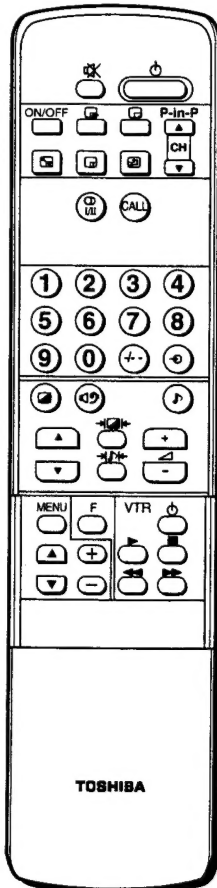
This manual applies to the two groups of models described below and there are slight differences among them.

| Group 1 | Group 2 |
|---------|--------------------|
| 48PJ5UE | 48PJ5UH 48PJ5UC |

Before operating the TV, please check:

- the model number of your TV.
- what is equipped with your TV according to the table below.

Difference table

| Item | Model | Group 1 | Group 2 |
|-----------------------------------|-------|---|---|
| Overview of the Remote Controller | |  |  |
| Teletext | | Equipped | Not equipped |

In this manual, the instructions are given using the model with maximum functions.

INTRODUCTION

Features

AV terminals for external equipment connection

- Three sets of video/audio inputs are located on the rear. The video/audio input 3 is located on the front as well as the rear.
- Two S-VIDEO terminals on the rear (video/audio input 1 and 3) and one on the front (video/audio input 3)
- One set of monitor output terminals
- One set of fixed audio output terminals

Selectable picture and selectable sound

Allows one-touch selection of your favourite picture quality and tone quality among three preset modes and one user-set mode.

NICAM and German stereo/bilingual broadcasts receivable

PIP (Picture-in-Picture)

Shows two different pictures on the screen simultaneously: a TV programme and the other from an external video source or another TV programme, with the two built-in UHF/VHF TV tuners.

OFF-timer and ON-timer

Turns off the TV automatically and will turn it back on at a preset time.

TELETEXT/FASTTEXT (48PJ5UE only)

Auto-Power-Off

If a vacant channel is tuned or TV broadcast for a day is finished, the TV will automatically turn off after about 15 minutes. However, if the Off-timer is operating, it takes precedence. This Auto-Power-Off feature does not operate in the VIDEO or blue background OFF mode.

No-Signal-Mute

When the system receives a TV signal from the aerial input (T) which does not contain a video signal, the sound will be muted. This No-Signal-Mute feature does not operate in the blue background OFF mode.

INTRODUCTION

Installation

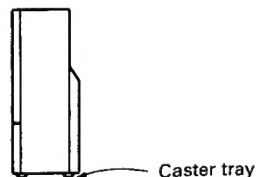
- INSTALL the unit in a room where direct light will not fall upon the screen.
Total darkness or a reflection on the picture screen may cause eyestrain. Soft and indirect lighting is recommended for comfortable viewing.
- ALLOW enough space between the unit and the wall for proper ventilation.
- AVOID excessively warm locations to prevent possible damage to the cabinet or components.
- RATED VOLTAGE: AC 110 V – 240 V, 50/60 Hz

CAUTION:

Avoid displaying stationary images on your TV screen for an extended period of time. Stationary patterns generated by the PIP display, computer displays, TELETEXT, etc. can become permanently ingrained on the picture tube. This damage is not protected by your warranty as it is the result of misuse. If you use your TOSHIBA Television to display still images, it is always advisable to reduce the brightness and contrast settings. Never leave a PIP display, computer display or videogame unattended.

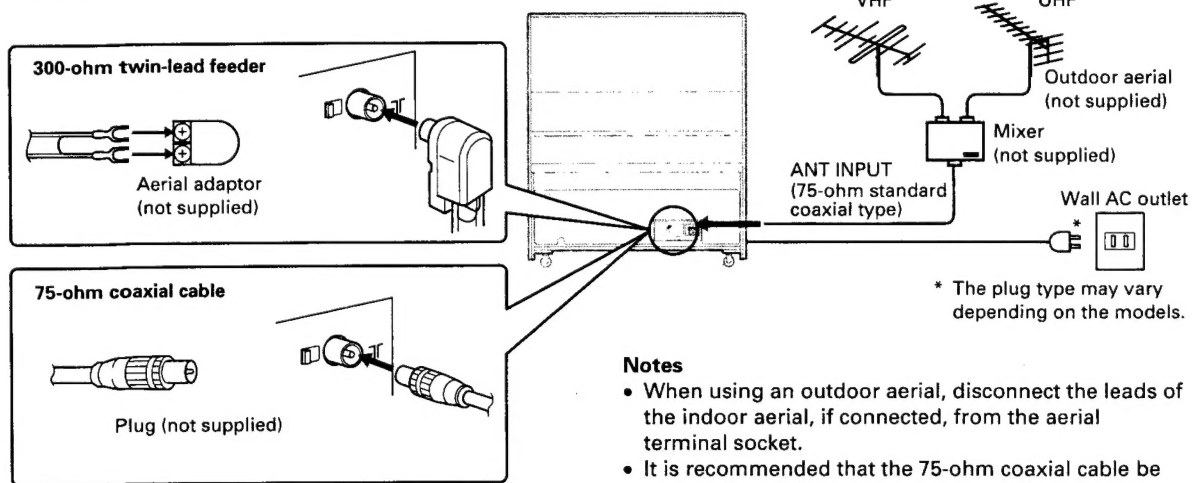
■ Precautions when moving and installing the unit

- This Projection Television is provided with casters at its bottom, with the object of facilitating its movement.
Depending on the material of the floor, it may get scratched when the unit is moved. So, take utmost care when moving the unit.
- When you want to fix the Projection Television at a given place, or use it on the carpet, make sure of using the accompanying caster trays (4 units). When placing the caster tray beneath the casters, take utmost care for your fingers not to get caught.



To connect the aerial

Optimum reception of colour requires a good signal and will generally mean that an outdoor aerial must be used. The exact type and positioning of the aerial will depend upon your particular area. Your Toshiba dealer or service personnel can best advise you on which aerial to use in your area.



Notes

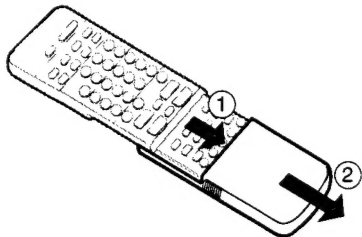
- When using an outdoor aerial, disconnect the leads of the indoor aerial, if connected, from the aerial terminal socket.
- It is recommended that the 75-ohm coaxial cable be used to eliminate interference and noise which may occur due to radio wave conditions.
- The aerial cable should not be bundled with the power cord and the like.

Using the ATT (attenuator) switch (See page 6.)
When visual interference occurs, set the ATT switch to ON using a small screwdriver.

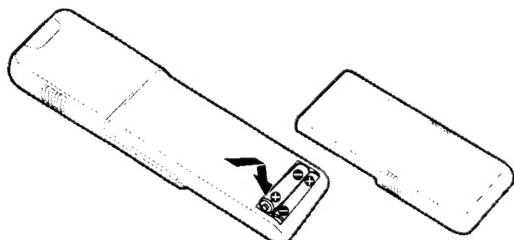
To prepare the Remote Controller

Battery installation

- 1 Remove the battery cover.

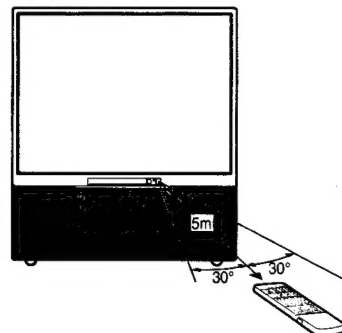


- 2 Insert two size AAA batteries matching the +/- polarities of the battery to the +/- marks inside the battery compartment.



Tips for remote operation

Effective range



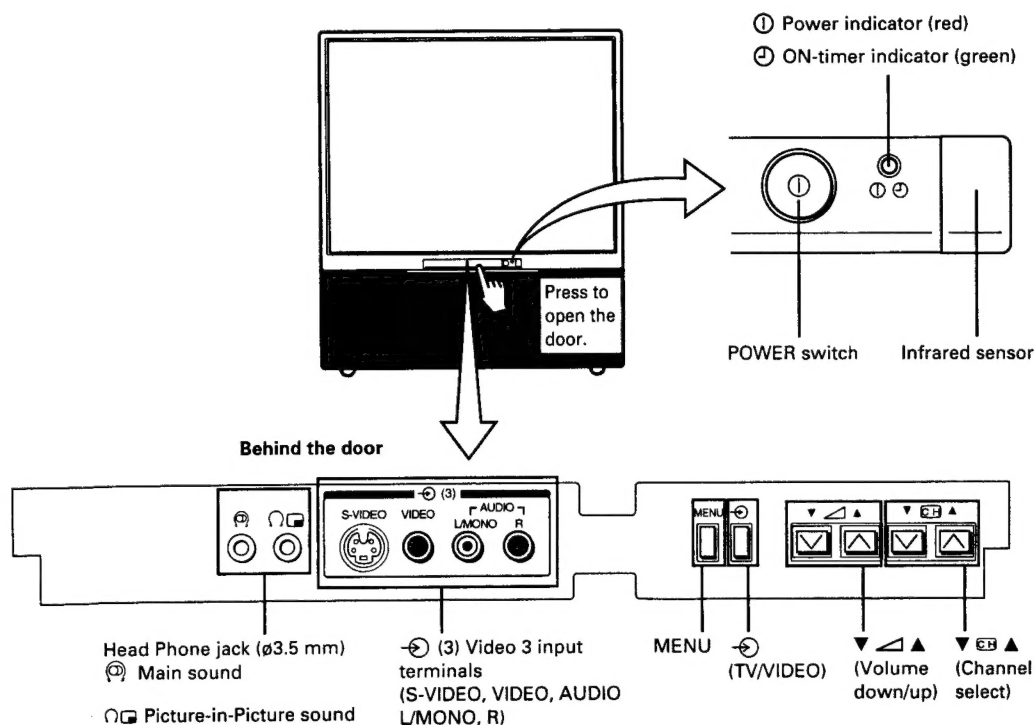
- The battery life should be about one year under normal use.
- When the Remote Controller will not be used for a long period of time or when the batteries are worn out, remove the batteries to prevent leakage.
- Do not throw the batteries into a fire. Dispose of used batteries in the specified manner.
- Do not drop, dampen or disassemble the Remote Controller.

INTRODUCTION

Names and Functions of Controls

- The following describes the name of each part of the TV and Remote Controller.

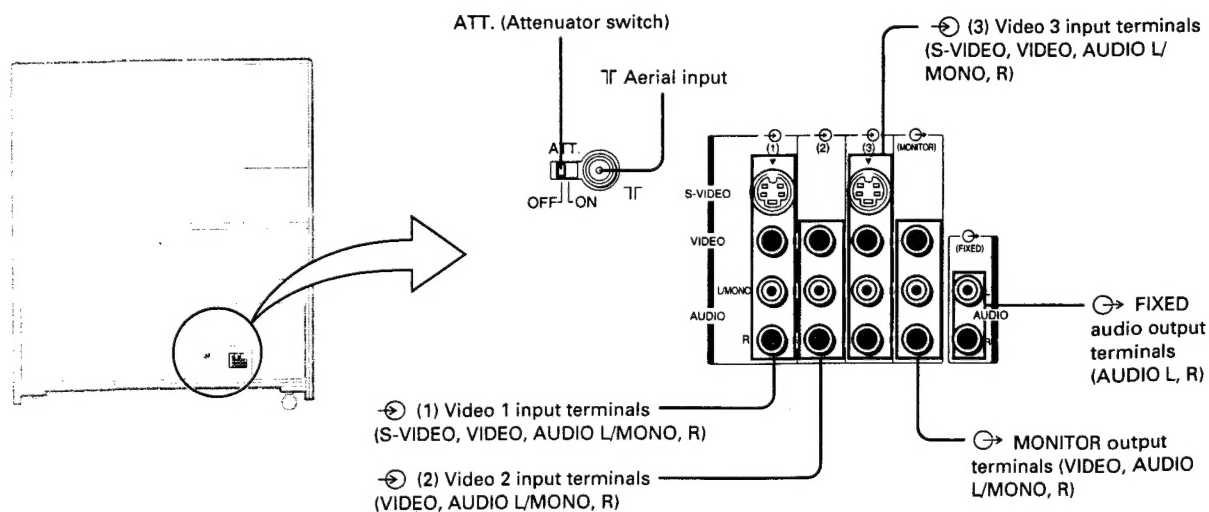
Front



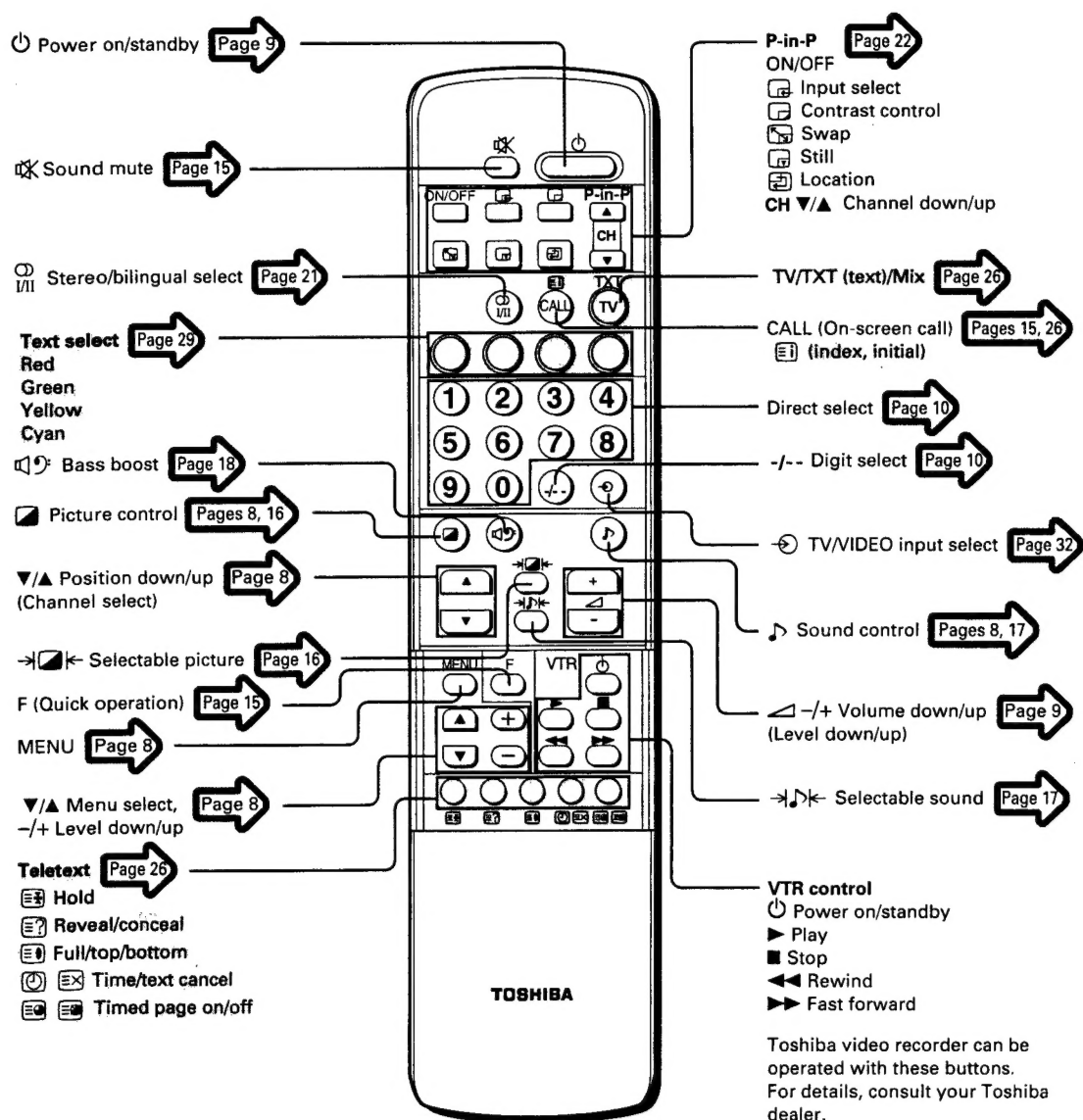
Note

Functions of MENU, ①, ②, ③, ④ and ⑤ are also provided to the Remote Controller.

Back



Remote Controller

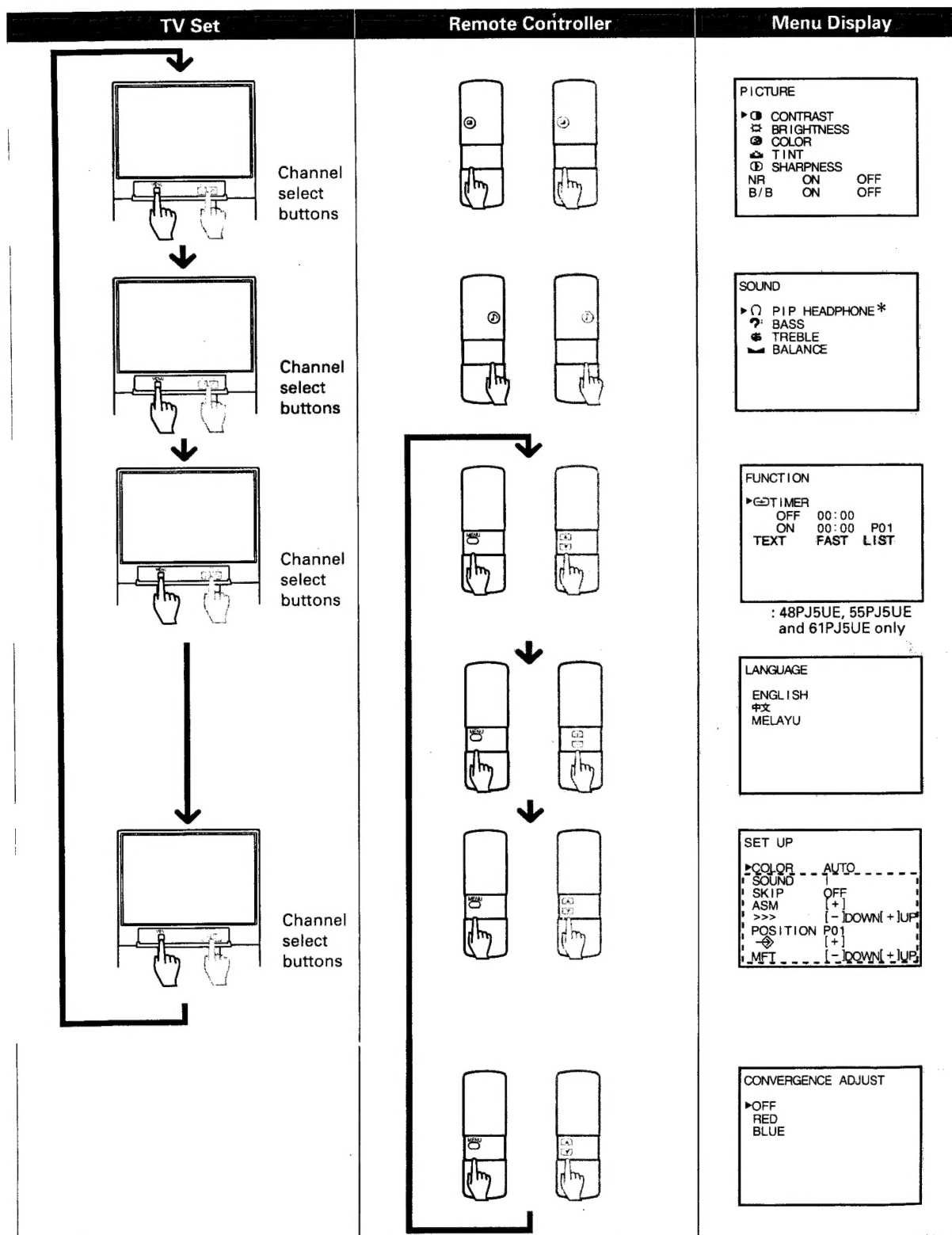


: 48PJ5UE, 55PJ5UE and 61PJ5UE only

GETTING STARTED

Menu Function

- Before watching the TV, please familiarize yourself with this method to use the menu function of this TV set.



Notes

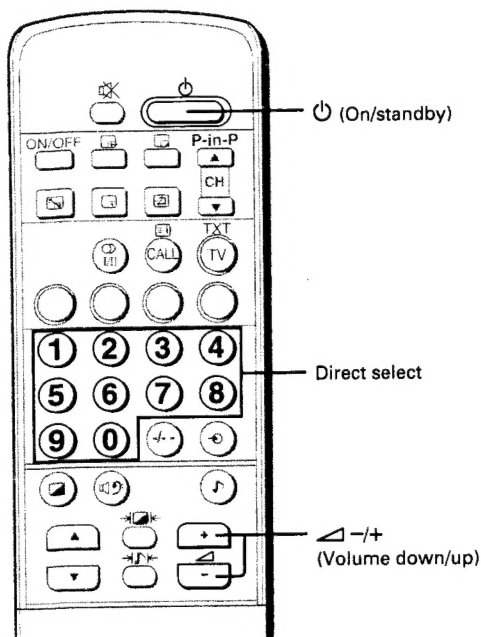
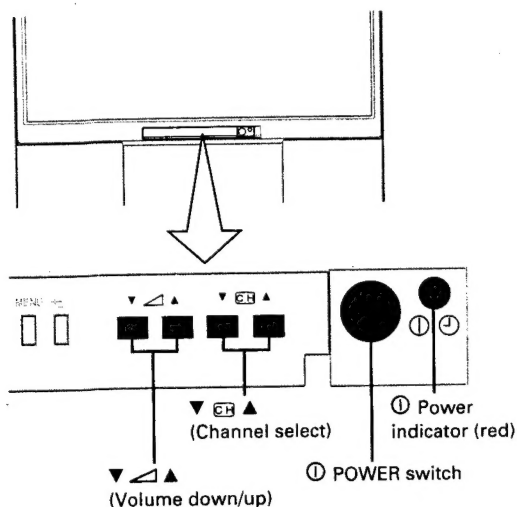
- The halftone illustrations above indicate that you press the button(s) to select the items on each function menu.
- The [] area on the SET UP menu display does not appear in the video mode.
- * The "PIP HEADPHONE" display appears only when PIP function is activated.

GETTING STARTED

Turning the Power On/Off

- The following describes how to turn the TV on/off using the TV's main switch and the Remote Controller.

To turn the power on/off



To turn the power on/off

- 1 Press the POWER switch. The red power indicator lights up.

- 2 If no picture appears, press the \odot button on the Remote Controller.

Notes

- You can also turn on the set by pressing one of the direct select buttons (0 – 9) instead of the \odot button. By pressing the number (one digit only) where the channel you want to watch is preset, you can turn on the set and channel selection at the same time. (For the channel preset procedures, refer to pages 11 and 12.)
- When the Remote Controller is not at your hand, you can turn on the set by pressing the ∇ \triangle or ∇ \square \triangle button on the TV set.

- 3 Adjust the sound volume with the volume down/up buttons.

- 4 To switch to the standby mode, press the \odot button.

- 5 To turn off completely, press the POWER switch.

GETTING STARTED

Watching TV Programmes

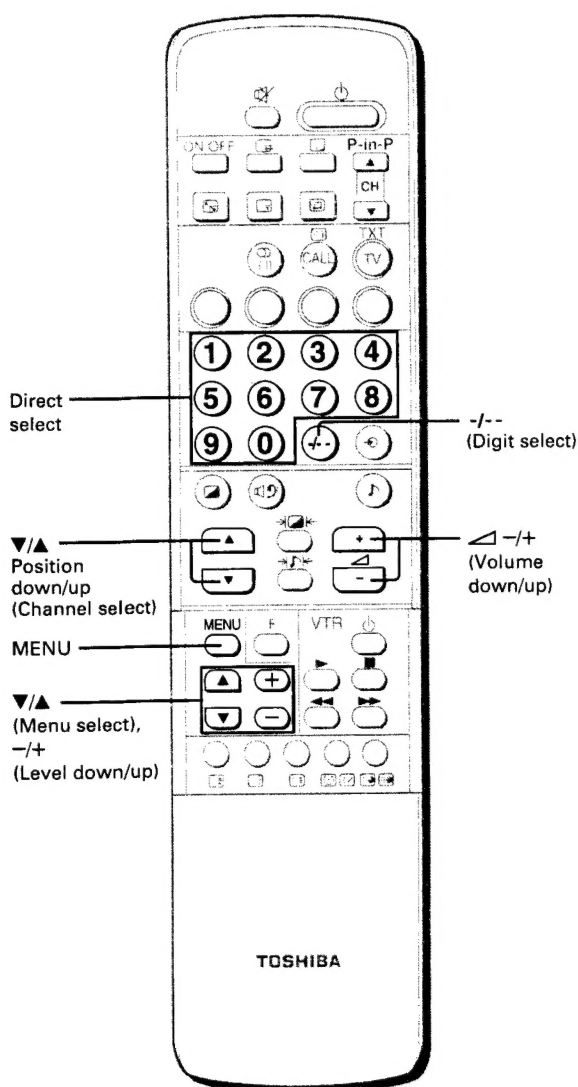
- You can watch TV programmes being broadcast on the preset channels.

Technical terms in this manual

Channel: the number or abbreviation of the broadcast station frequency in each country (SBC, CH5, CH8, CH12, etc.)

Position: the number on your TV where channels are stored (0 – 99)

To watch a TV programme



To select a TV programme

1

Select the desired programme.

10

Using the direct select buttons

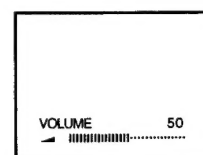
- To select a one-digit position number: press the -/-- button to display "--" and 0 – 9 to select a number. (0 – 9)
- To select a two-digit position number: press -/-- to display "--" and press 0 – 9 to select a number. (10 – 99)

Using the position down (▼)/up (▲) buttons

Press ▼ to select lower position numbers; ▲ to select higher ones.

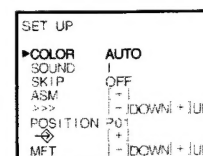
2

Adjust the sound volume with the ▲/▼ buttons.



If the colour or sound of a certain channel is abnormal

The colour or sound system setting may be incorrect. Press the MENU button to call up the SET UP menu on the right and change the setting as follows: For the systems in each country, refer to page 34.



- When the colour of the picture is abnormal**
Press the menu select ▼/▲ buttons to move the cursor (►) to COLOR and select the correct colour system with the level down (–)/up (+) buttons. AUTO, PAL, SECAM, 443NTSC and 358NTSC will appear cyclically.
- When the sound is abnormal**
Press the menu select ▼/▲ buttons to move the cursor (►) to SOUND and select the correct sound system with the level down (–)/up (+) buttons. I, DK, M and BG will appear cyclically.

If the sound or picture of every channel is abnormal

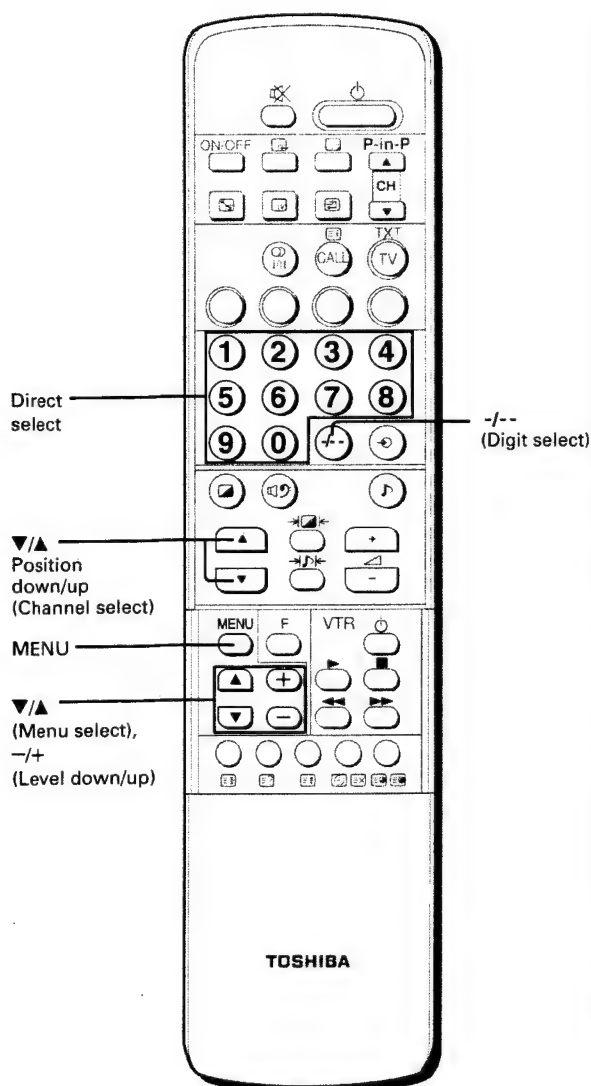
Preset the channels using the ASM (Automatic Search Memory). See page 11.

GETTING STARTED

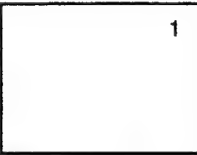
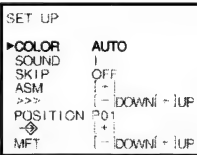
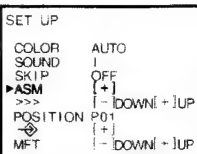
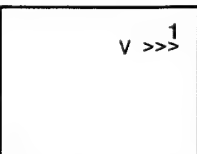
Tuning in

- First, use the ASM (Automatic Search Memory) function to preset all active channels in your area automatically.
Then, arrange the preset channels with the MANUAL SEARCH (>>>), MFT (Manual Fine Tuning) and SKIP functions so that you can tune into only desired channels.
- This section shows how to tune in channels using mainly the Remote Controller. You can also perform the system select, ASM, MANUAL SEARCH (>>>), MFT and SKIP operations using the buttons on the TV set. See page 8.

To preset channels (ASM)



ASM (Automatic Search Memory)

- 1 Select the head of the position number to start the ASM with the position down (▼)/up (▲) buttons or the direct select buttons.
 
- 2 Press the MENU button repeatedly to call up the SET UP menu on the screen.
 
- 3 Confirm that "COLOR" is set to "AUTO" and "SOUND" is set to proper system. If not, press the menu select ▼/▲ buttons to move the cursor (▶) to "COLOR" or "SOUND" and press the level down (–)/up (+) buttons to select each proper system. (See page 34.)
- 4 Press the menu select ▼/▲ buttons to move the cursor (▶) to "ASM".
 
- 5 Press the level up (+) button to start the ASM. All active channels will be preset automatically. When presetting is complete, the initial position number will reappear.
 

After presetting

Check the preset channels by pressing the position down (▼)/up (▲) buttons.

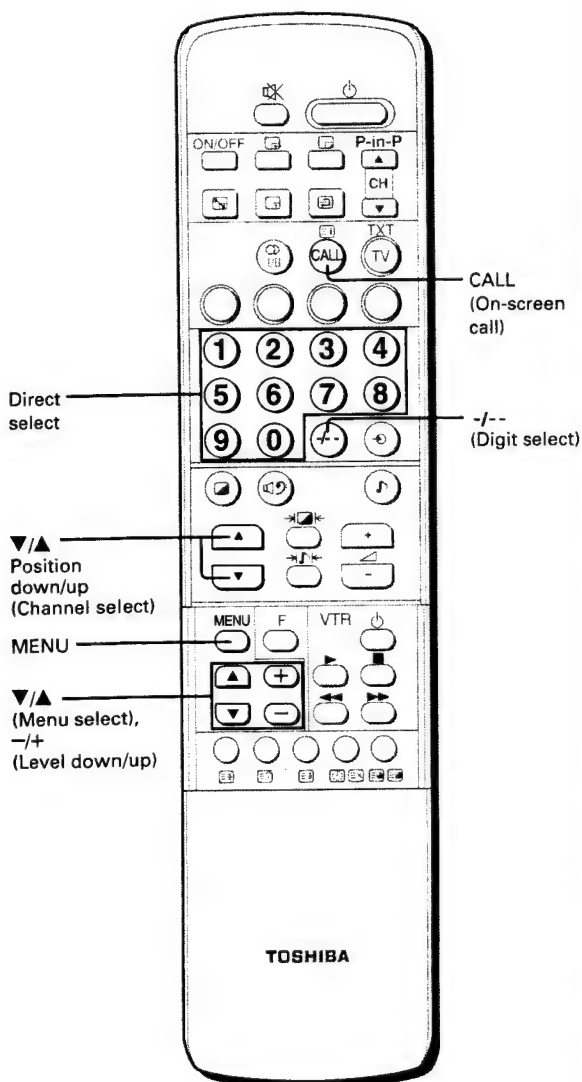
- If the picture or sound of a certain channel is not good, re-tune the channel using the ASM, MANUAL SEARCH (>>>) or MFT function. (See page 12 and 13).
- If the colour of a certain channel is abnormal, automatic colour system selection (AUTO) may malfunction, or sound system selection is wrong. In such a case, select another colour and/or sound system.

GETTING STARTED

Tuning in (continued)

- Use the MANUAL SEARCH (>>>) function if desired channels cannot be preset with the ASM or if you would like to preset the desired channels to specific position numbers one by one.
- It is convenient if you put the channel numbers to the same position numbers using MANUAL SEARCH (>>>) and SKIP functions.
- The following describes how to tune in channels with the MANUAL SEARCH (>>>) function using mainly the Remote Controller. You can also perform the MANUAL SEARCH (>>>) operation using the buttons on the TV set. See page 8.

To preset channels (Manual search)



Manual search (>>>)

1 Select a desired position number to preset with the position down/up or direct select buttons.

2 Press the MENU button repeatedly to call up the SET UP menu on the screen.

| | |
|----------|---------------------|
| SET UP | |
| COLOR | AUTO |
| SOUND | I |
| SKIP | OFF |
| ASM | [+] |
| >>> | [- DOWN] + [UP] |
| POSITION | P01 |
| MFT | [-] DOWN [+] UP |

3 Press the menu select ▼/▲ buttons to move the cursor (▶) to ">>>".

| | |
|----------|---------------------|
| SET UP | |
| COLOR | AUTO |
| SOUND | I |
| SKIP | OFF |
| ASM | [+] |
| >>> | [- DOWN] + [UP] |
| POSITION | P01 |
| MFT | [-] DOWN [+] UP |

4 Press the level down (-)/up (+) buttons to start searching. The level down (-) button searches for lower-numbered channels; the level up (+) button for higher-numbered channels. Repeat this process until you can get the desired channel.

| | |
|-------------------|--|
| Ex. search up (+) | |
| U >>> | |

| | |
|---------------------|--|
| Ex. search down (-) | |
| U <<< | |

5 When the desired programme is shown, press the menu select ▼/▲ buttons to move the cursor (▶) to "◆".

| | |
|----------|---------------------|
| SET UP | |
| COLOR | AUTO |
| SOUND | I |
| SKIP | OFF |
| ASM | [+] |
| >>> | [- DOWN] + [UP] |
| POSITION | P01 |
| ◆ | [+] |
| MFT | [-] DOWN [+] UP |

6 Press the level up (+) button to memorize the channel at the current position.

| | |
|----------|---------------------|
| SET UP | |
| COLOR | AUTO |
| SOUND | I |
| SKIP | OFF |
| ASM | [+] |
| >>> | [- DOWN] + [UP] |
| POSITION | P01 |
| ◆ | [+] |
| MFT | [-] DOWN [+] UP |

7 When you desire to store another channel at another position, move the cursor (▶) to "POSITION" with the menu select ▼/▲ buttons and select a desired position with the level down (-)/up (+) buttons. Then, press the menu select ▼/▲ buttons to move the cursor (▶) to ">>>" and repeat the steps 4 to 6. Or, repeat the steps 1 to 7 after the display disappears.

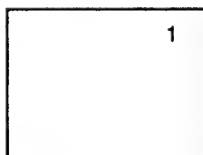
| | |
|----------|---------------------|
| SET UP | |
| COLOR | AUTO |
| SOUND | I |
| SKIP | OFF |
| ASM | [+] |
| >>> | [- DOWN] + [UP] |
| POSITION | P05 |
| ◆ | [+] |
| MFT | [-] DOWN [+] UP |

MFT (Manual Fine Tuning) and to skip unnecessary position numbers

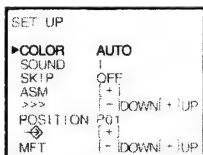
MFT (Manual Fine Tuning)

The adjustments below are not necessary under normal conditions. However, in areas of inferior broadcast conditions where adjustment is necessary for a better picture, adjust the tuning with the MFT (Manual Fine Tuning).

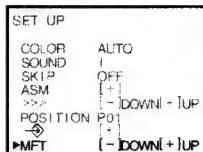
- 1 Select the channel you want to fine-tune with the position down (▼)/up (▲) buttons or direct select buttons.



- 2 Press the MENU button repeatedly to call up the SET UP menu on the screen.



- 3 Press the menu select ▼/▲ buttons to move the cursor (►) to "MFT".

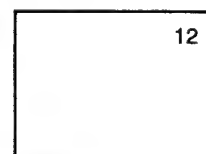


- 4 Press the level down (-)/up (+) buttons until the best possible picture and sound are obtained. [-]DOWN or [+]UP is highlighted while tuning in.

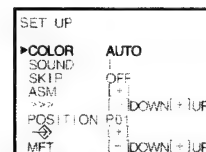
To skip a position number

After presetting the channels, you may skip unnecessary position numbers so that only the channels you want to watch are selected.

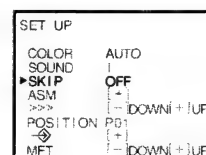
- 1 Select the position number to be skipped with the position down (▼)/up (▲) buttons or direct select buttons.



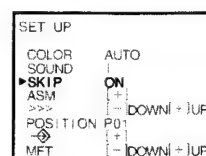
- 2 Press the MENU button repeatedly to call up the SET UP menu on the screen.



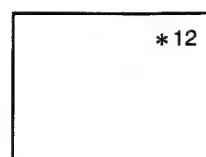
- 3 Press the menu select ▼/▲ buttons to move the cursor (►) to "SKIP".



- 4 Press the level down (-)/up (+) buttons to select "SKIP ON".



- 5 Press the CALL button to turn off the SET UP menu display. Select the position number to be skipped with the direct select buttons. The * mark appears to the left of the position number. The position number will then be skipped when you select the programme with the position down (▼)/up (▲) buttons.



To restore a skipped position number

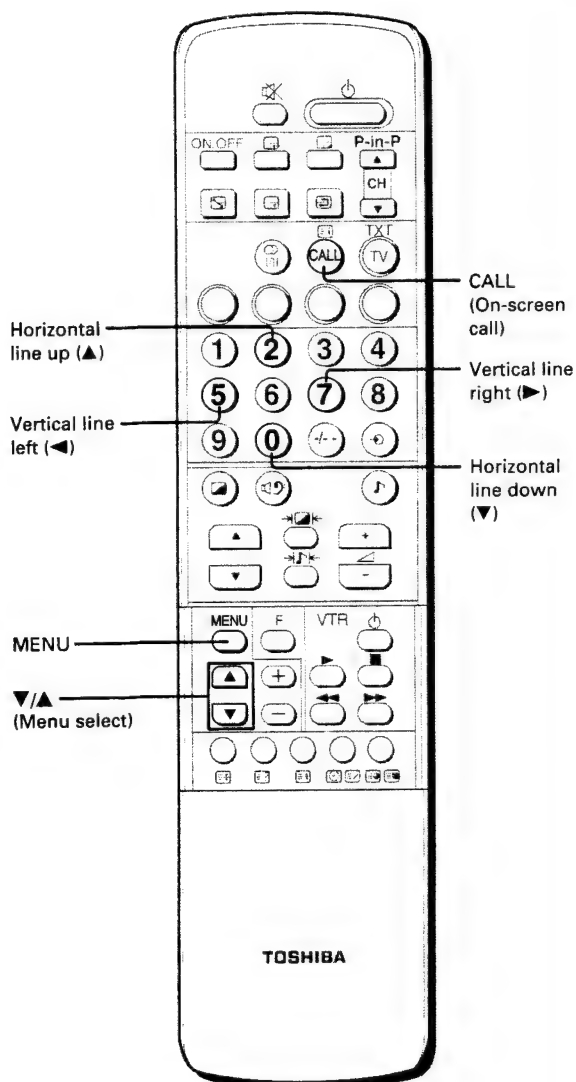
- 1 Select the position number you want to restore with the direct select buttons.
- 2 Press the MENU button to call up the SET UP menu display and press the menu select ▼/▲ buttons to move the cursor (►) to "SKIP".
- 3 Press the level down (-)/up (+) buttons to select "SKIP OFF".

GETTING STARTED

Adjusting the Colour Convergence

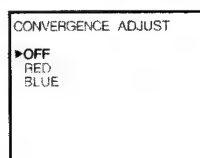
- This projection TV uses three separate TV tubes: a red one, a green one, and a blue one. The red, green and blue images are projected onto the screen, where they converge to form a full colour picture. You can see a clear picture only when they converge correctly.
- Your dealer should adjust the colour convergence when your TV is delivered. However, convergence may drift over time or if you move the TV. If you can see clear images on the screen, skip this procedure.

To align the colour

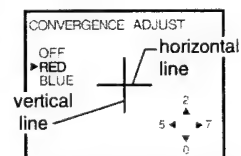


To check and align the colours

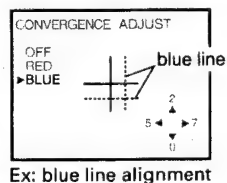
- 1 Press the MENU button repeatedly to display the CONVERGENCE ADJUST menu.



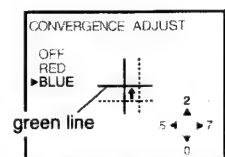
- 2 Press the menu select ▼/▲ buttons to move the cursor (►) to "RED" or "BLUE". One vertical and one horizontal line appear.



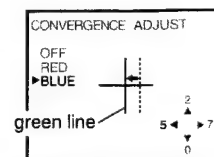
- 3 If you see separate coloured lines, you have to align the colours. For example, when the blue line is shifted, press the menu select ▼/▲ buttons to move the cursor (►) to "BLUE".



- 4 Press the "2 (up)", "0 (down)", "5 (left)" and "7 (right)" buttons to converge the blue line into the green line.



Adjusting the horizontal line



Adjusting the vertical line

- 5 When you adjust the red line, press the menu select ▼/▲ buttons to move the cursor (►) to "RED". Then, repeat step 4.

To end the convergence adjustment

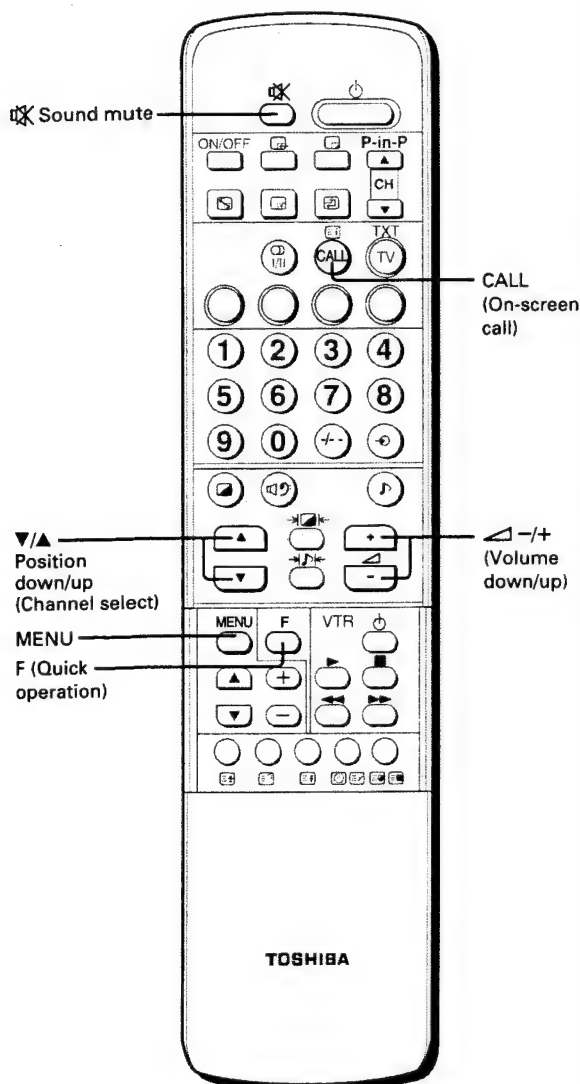
- 1 Press the menu select ▼/▲ buttons to move the cursor (►) to "OFF". The vertical and horizontal lines disappear.
- 2 Press the MENU button or the CALL button.

BASIC OPERATION

Convenient Picture and Sound Controls

- The following describes how to operate using mainly the Remote Controller. You can also perform this operation using the MENU button on the TV set. See page 8.

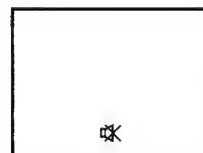
Sound muting and on-screen calling



To mute the sound

The muting function is convenient when you need to pay attention to surrounding sounds, answer a phone call, receive a visitor, etc.

- 1 Press the button. The mark appears on the screen.



- 2 To restore the sound, press the button again.

To retain the on-screen display

Generally, the programme number and the (stereo) or I/II (bilingual) reception indicator will disappear within 5 seconds once the programme number has been changed.

- 1 To retain the programme number on the screen, press the CALL button.
- 2 To return to the automatic-disappearing mode, press the CALL button again.

To turn off the menu function display instantly

Generally, the menu function display (FUNCTION, LANGUAGE, SET UP) is retained for 15 seconds by pressing the MENU button once. To turn off the display instantly, press the CALL button.

To select the position number rapidly

When you select a position number, press the F button and the position down/up or button simultaneously. The position number decreases or increases by 10.

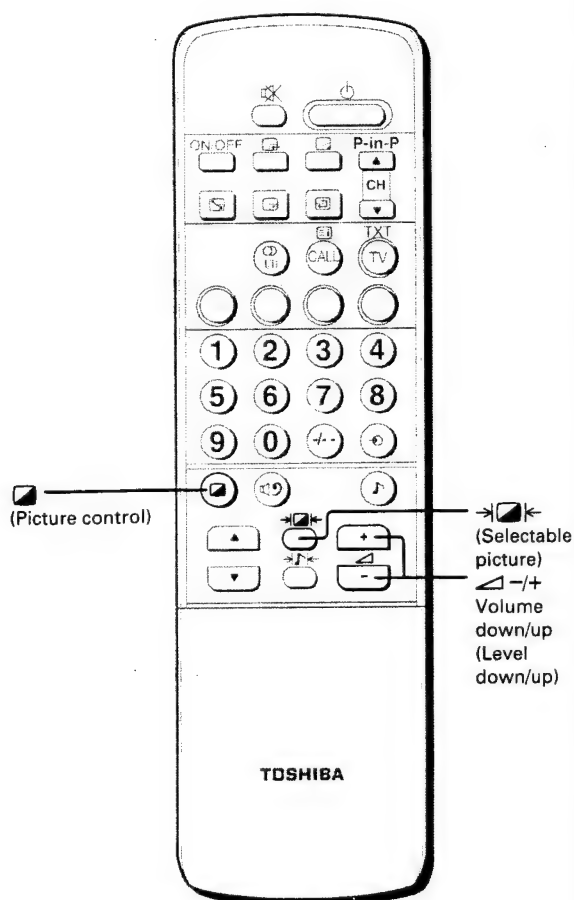
To change the volume rapidly

When you adjust the volume, press the F button and the - or + button simultaneously. The volume changes rapidly.

Convenient Picture and Sound Controls (continued)

Selectable picture

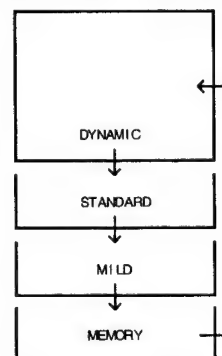
You can select the picture quality instantly among three preset modes and one user-set mode.



To select the picture mode

Press the button to select the desired picture quality.

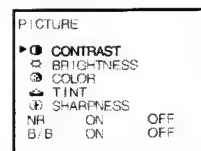
DYNAMIC, STANDARD, MILD and MEMORY (user-set) can be selected cyclically.



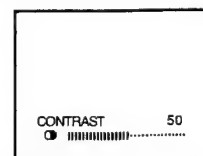
| Mode | Picture quality |
|----------|-----------------------------|
| DYNAMIC | bright and dynamic picture |
| STANDARD | standard picture |
| MILD | soft and moody picture |
| MEMORY | the picture quality you set |

To set the desired picture quality to the MEMORY position

- 1 Press the button. The picture control menu appears.



- 2 Press the button repeatedly to move the cursor (▶) to the desired adjusting item, and press the buttons to adjust the level.



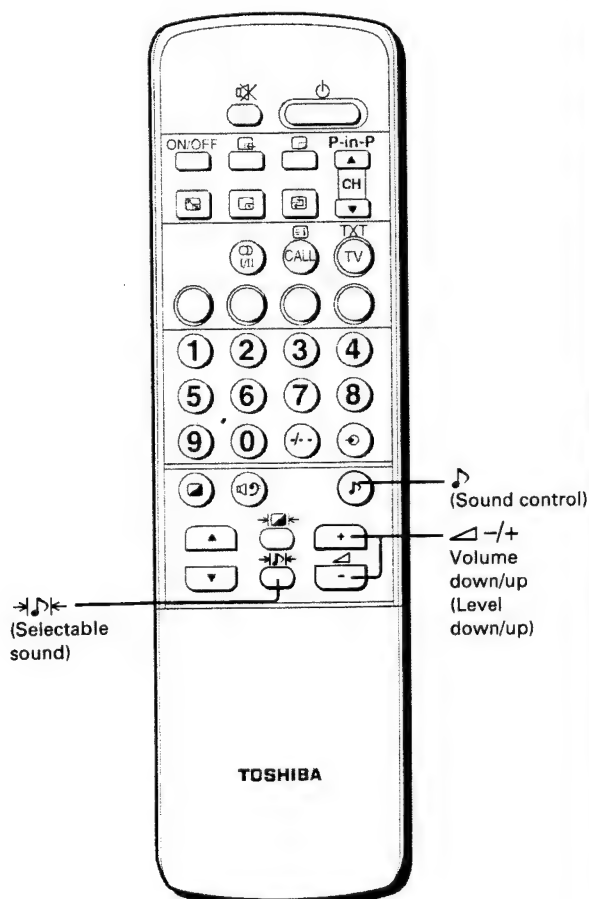
| Item | Pressing | |
|------------|----------|----------|
| | | |
| CONTRAST | weaker | stronger |
| BRIGHTNESS | darker | lighter |
| COLOR | paler | deeper |
| TINT * | purplish | greenish |
| SHARPNESS | softer | sharper |

* for NTSC only

The adjusted level is stored in the MEMORY position.

Selectable sound

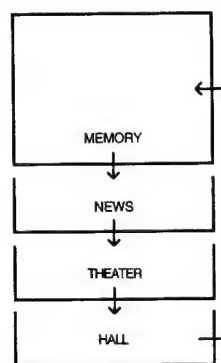
You can select the sound quality instantly among three preset modes and one user-set mode.



To select the sound mode

Press the button to select the desired sound quality.

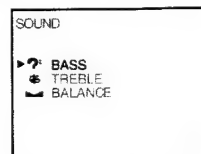
MEMORY (user-set), NEWS, THEATER and HALL can be selected cyclically.



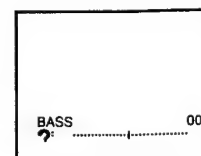
| Mode | Sound quality |
|---------|--|
| MEMORY | the sound quality you set |
| NEWS | news/dialogue |
| THEATER | a movie theater filled with a dynamic sound |
| HALL | a concert hall filled with a rich warm sound |

To set the desired sound quality to the MEMORY position

- 1 Press the button. The sound control menu appears.



- 2 Press the button repeatedly to move the cursor (►) to the desired adjusting item, and press the buttons to adjust the level.



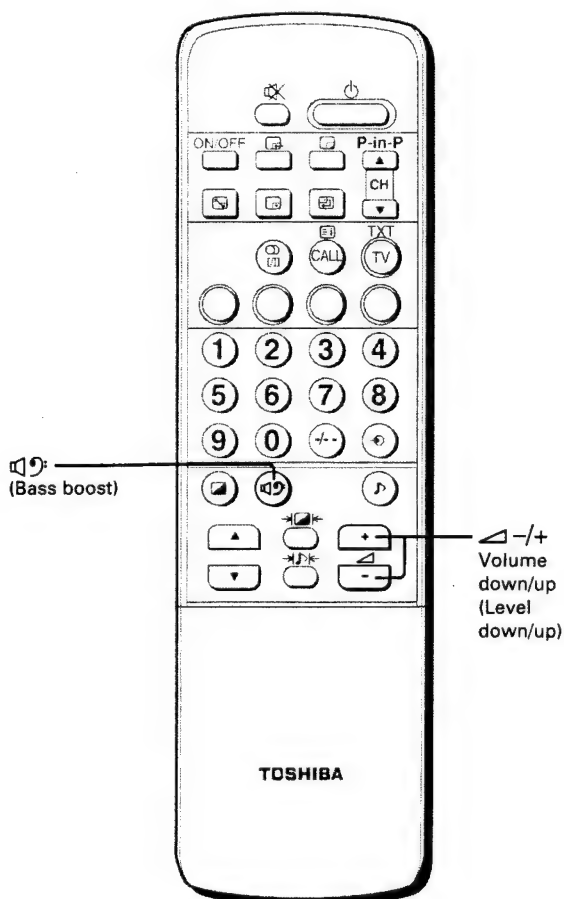
| Item | | Pressing | |
|------|---------|-----------------------------|----------------------------|
| | | | |
| | BASS | weaker | stronger |
| | TREBLE | weaker | stronger |
| | BALANCE | decreases the right channel | decreases the left channel |

The adjusted level is stored in the MEMORY position.

BASIC OPERATION

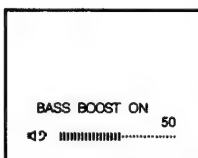
Convenient Picture and Sound Controls (continued)

To select the sound effect

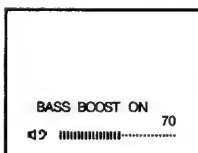


To use the bass boost

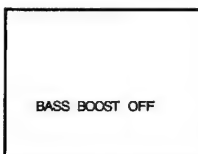
- 1 Press the button repeatedly until BASS BOOST ON is displayed.



- 2 While the BASS BOOST ON is displayed on the screen, adjust the bass boost level using the buttons.



- 3 To turn off the bass boost, press the button to display BASS BOOST OFF.



Note

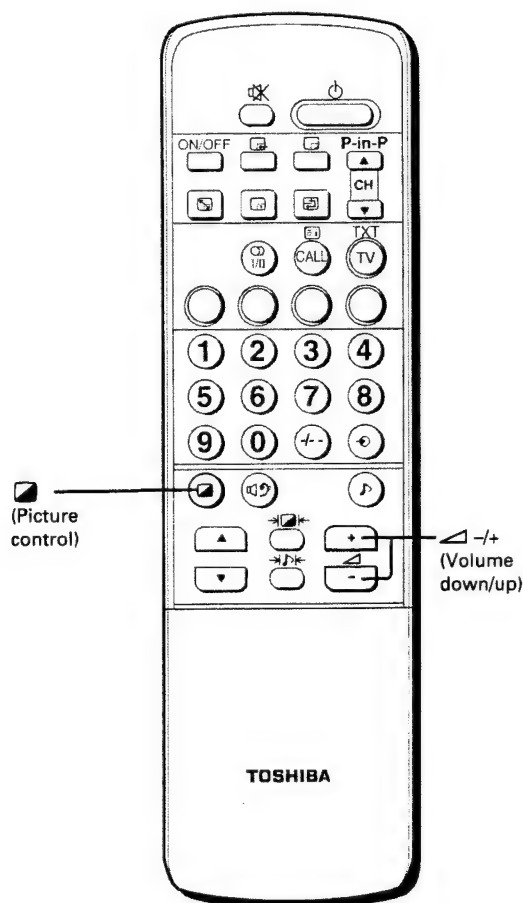
The selected ON or OFF mode and the adjusted level are stored in the MEMORY position of the selected sound mode.

BASIC OPERATION

Using Other Menus


- The following describes how to operate using mainly the Remote Controller.
You can also perform this operation using the MENU button on the TV set. See page 8.

Picture noise reduction and blue background



To reduce the picture noise

If the signal being received is weak and the picture is blurry, activate the noise reducer to improve the picture.

- Press the  button repeatedly to move the cursor (▶) to "NR".

| PICTURE | | |
|---------|------------|--------|
| | CONTRAST | |
| | BRIGHTNESS | |
| | COLOR | |
| | TINT | |
| | SHARPNESS | |
| | NR | ON OFF |
| | B/B | ON OFF |

- Press the buttons to select "ON".


| PICTURE | | |
|---------|------------|--------|
| | CONTRAST | |
| | BRIGHTNESS | |
| | COLOR | |
| | TINT | |
| | SHARPNESS | |
| | NR | ON OFF |
| | B/B | ON OFF |

To turn off the picture noise reduction

Repeat steps 1 and 2 and select NR OFF.

To turn the screen blue

With the blue background function ON, the TV will automatically turn blue when no signal is being received.

- Press the  button repeatedly to move the cursor (▶) to "B/B".

| PICTURE | | |
|---------|------------|--------|
| | CONTRAST | |
| | BRIGHTNESS | |
| | COLOR | |
| | TINT | |
| | SHARPNESS | |
| | NR | ON OFF |
| | B/B | ON OFF |

- Press the buttons to select "ON".

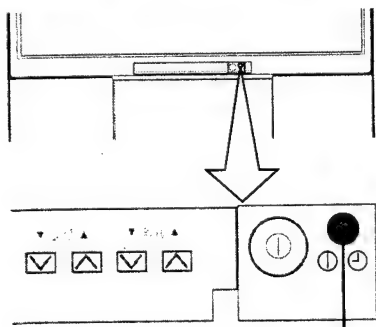
| PICTURE | | |
|---------|------------|--------|
| | CONTRAST | |
| | BRIGHTNESS | |
| | COLOR | |
| | TINT | |
| | SHARPNESS | |
| | NR | ON OFF |
| | B/B | ON OFF |

To turn off the blue background

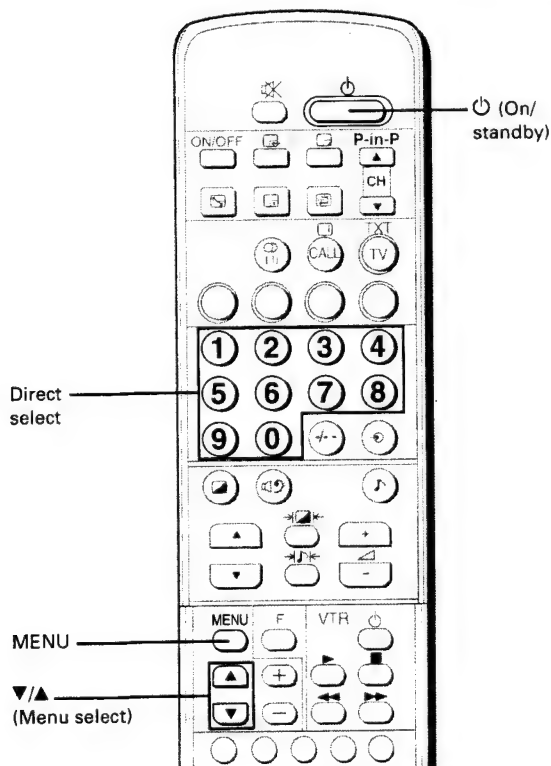
Repeat steps 1 and 2 above and select B/B OFF.

Using Other Menus (continued)

ON/OFF timer



Ⓢ ON-timer indicator (green)



If you enter an incorrect number while setting the ON/OFF timer

Re-enter the time with the direct select buttons.

Note

The maximum presettable time for the ON/OFF timer is 12:59.

To turn off the TV automatically (OFF timer)

With the OFF timer, the TV will automatically switch to standby mode at a preset time.

- 1 Press the MENU button repeatedly to call up the FUNCTION menu on the screen. Press the menu select ▼/▲ buttons to select OFF (OFF timer).

| FUNCTION | | | |
|----------|------|-------|-----|
| ▶GETIMER | OFF | 00:00 | P01 |
| | ON | 00:00 | |
| TEXT | FAST | LIST | |

- 2 Press the direct select buttons to set after how many hours and minutes you want the TV to switch into the standby mode.

| FUNCTION | | | |
|----------|------|-------|-----|
| ▶GETIMER | OFF | 00:30 | P01 |
| | ON | 00:00 | |
| TEXT | FAST | LIST | |

Ex. 30 minutes:

Press 0, 0, 3 and 0.

Once the preset time has elapsed, the TV will automatically go into standby mode.

To cancel the OFF timer

Press the Ⓢ button twice (to turn off the TV once and turn it on again) or in step 2 above set the OFF time to 00:00.

To turn on the TV automatically (ON timer)

With the ON timer, the TV will automatically turn on to a preset channel at a preset time.

- 1 Press the MENU button repeatedly to call up the FUNCTION menu on the screen. Press the menu select ▼/▲ buttons to select ON (ON timer).

| FUNCTION | | | |
|----------|------|-------|-----|
| ▶GETIMER | OFF | 00:00 | P01 |
| | ON | 00:00 | |
| TEXT | FAST | LIST | |

- 2 Press the direct select buttons to set the TV ON time and position number. The colour of the Ⓢ ON-timer indicator will change from red to green.

| FUNCTION | | | |
|----------|------|-------|-----|
| ▶GETIMER | OFF | 00:00 | P06 |
| | ON | 08:00 | |
| TEXT | FAST | LIST | |

Ex. 8 hours, position

number 6:

Press 0, 8, 0, 0, 0 and 6.

- 3 Press the Ⓢ button to switch the TV to standby mode.

At the preset time, the TV will turn on automatically.

To cancel the ON timer

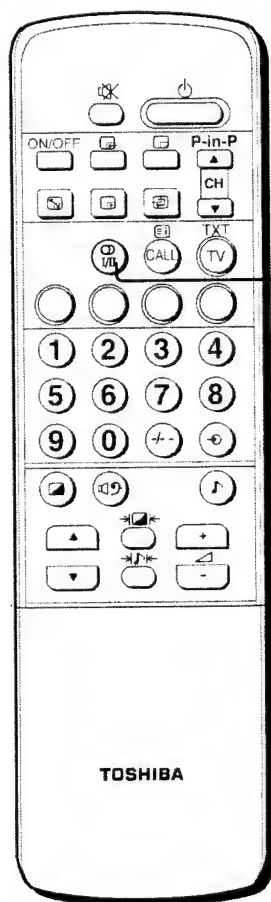
Push the main switch to turn off the TV or in step 2 above set the ON time and position number to 00:00 P00.

BASIC OPERATION

Enjoying Stereo and Bilingual Broadcasts

- The unit receives both stereo and bilingual broadcasts transmitted in either the NICAM or German stereo/bilingual broadcast system.

To select the stereo/bilingual mode



⦿/II (Stereo/
bilingual select)

If stereo sound is noisy

If a broadcasting signal is not strong enough and noise-free stereo sound is not available, press the ⦿/II button until the ▽ indicator appears on the screen (monaural mode). The noise should be reduced.

Stereo programmes

- When a stereo programme is received, ⦿ appears.

12
⦿

- Press the ⦿/II button to select the stereo/monaural mode. ⦿/I, ⦿/II and ▽ appear cyclically on the screen.

⦿/I

| Display | Reception mode |
|---------|----------------|
| ⦿/I | Stereo |
| ⦿/II | Stereo |
| ▽ | Monaural |

Bilingual programmes

- When a bilingual programme is received, I / II appears.

12
I/II

- Press the ⦿/II button to select the sound to be heard. The sound differs according to the transmission system: NICAM or German stereo/bilingual broadcast. ⦿/I, ⦿/II and ▽ appear cyclically on the screen.

⦿/II

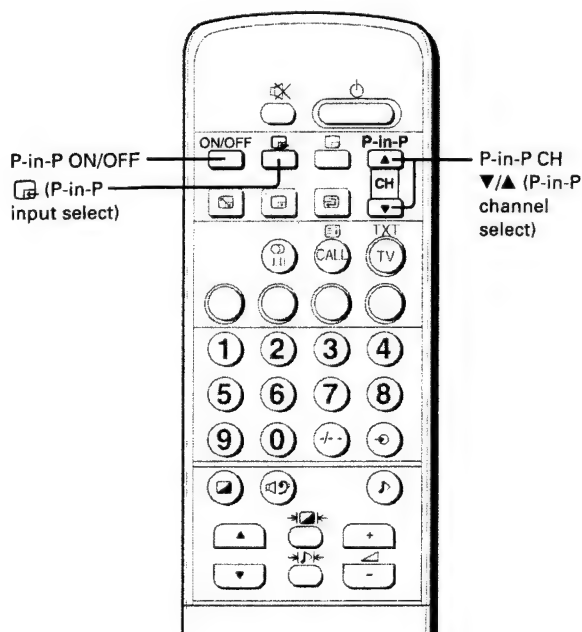
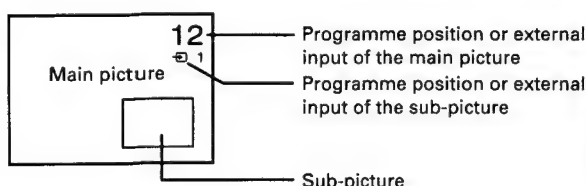
| Display | Sound to be heard | |
|---------|-------------------|---------------------------------------|
| | NICAM | German stereo/ bilingual broadcast |
| ⦿/I | Sub I sound | Main sound |
| ⦿/II | Sub II sound | Sub sound |
| ▽ | Main sound | Main sound |

ADVANCED OPERATION

Watching Picture-in-Picture

- The unit is capable of displaying two pictures simultaneously. This is called the Picture-in-Picture function. A TV picture or a picture from external source equipment such as a VTR can be displayed as a sub-picture.

To display a sub-picture

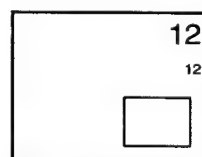


Notes

- If there are no signals for the main and sub-pictures or if the signals are weak, the Picture-in-Picture function may not work correctly.
- If the colour systems of the main picture and sub-picture are different, the size of the sub-picture may slightly differ and the quality of the sub-picture may be impaired.
- The Teletext cannot be displayed as the sub-picture. (Teletext is featured only for 48PJ5UE.)





To display a TV picture as a sub-picture

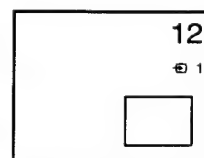
- 1 Turn on the TV and select the desired programme.
- 2 Press the P-in-P ON/OFF button. A sub-picture with a dark grey frame will appear on the screen.
- 3 Press the P-in-P CH ▼/▲ button to select the desired programme for the sub-picture.
- 4 To turn off the sub-picture, press the P-in-P ON/OFF button again.



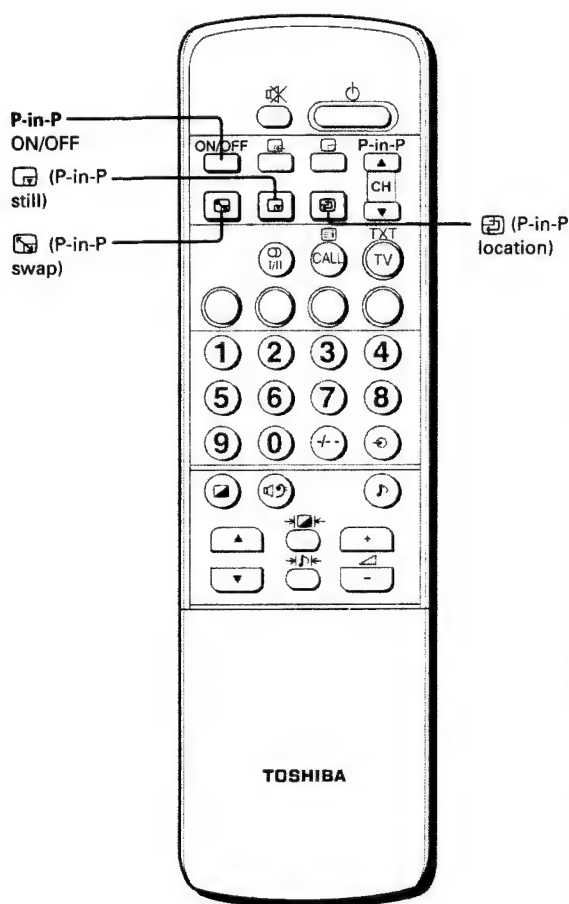
To display a picture from an external source as a sub-picture

Connect external source equipment for the sub-picture. (For connection, see page 32.)

- 1 Turn on the TV and select the desired programme.
- 2 Press the P-in-P ON/OFF button to display a sub-picture.
- 3 Press the  button repeatedly to select the input for the sub-picture. A TV picture, the picture from the video input 1 () 1), video input 2 () 2) and video input 3 () 3) will appear cyclically.



Various Picture-in-Picture operations

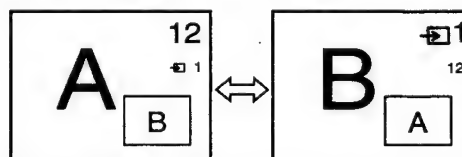


Note

If the main picture is in the Teletext mode, the Teletext mode will be cancelled by pressing the button. (Teletext is featured only for 48PJ5UE.)

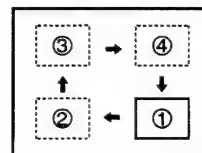
To switch the main and sub-pictures

Press the button when a sub-picture is displayed. The main and sub-pictures are switched. Press the button again to switch again.



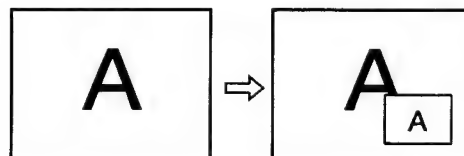
To change the position of the sub-picture

Press the button repeatedly when a sub-picture is displayed. The display position of the sub-picture will change in order ① to ④.



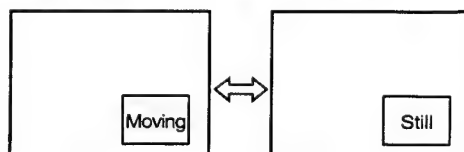
To display a frozen frame of the main picture as a sub-picture

When no sub-picture is displayed, press the button. The main picture displayed at that moment will appear as a still picture with a red frame in the sub-picture position. To turn off the sub-picture, press the P-in-P ON/OFF button.



To freeze the sub-picture

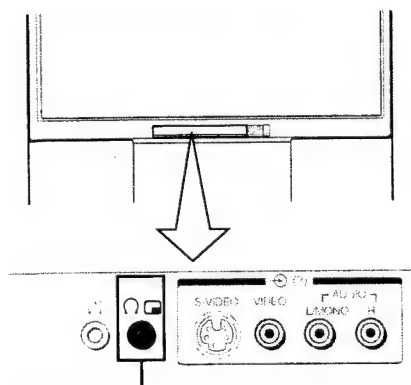
Press the button when a sub-picture is displayed. The sub-picture will be a still picture. To return to a moving picture, press the button again.



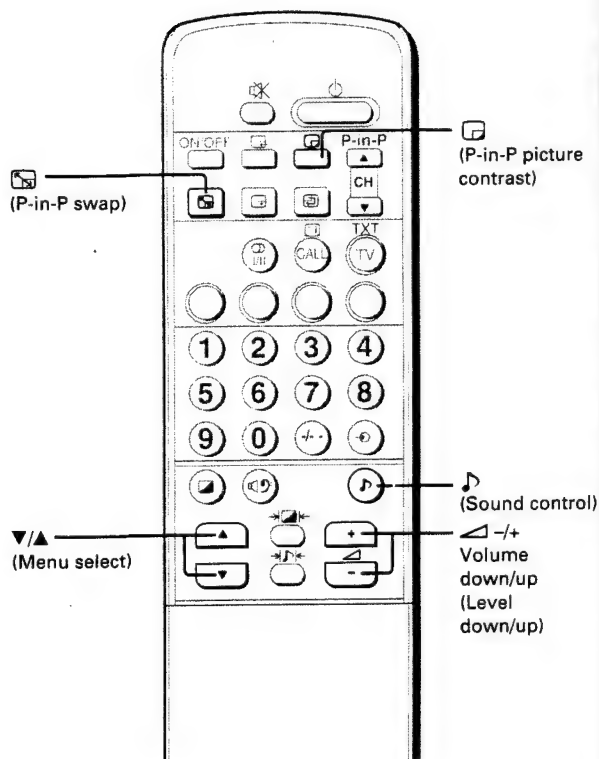
Watching Picture-in-Picture

(continued)

Various Picture-in-Picture operations (continued)

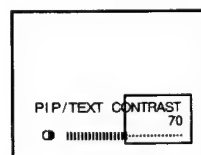


Head Phone jack (ø3.5 mm)
 Picture-in-Picture sound



To adjust the contrast of the sub-picture

- 1 Press the button to display on the right.



| Item | Pressing | |
|----------|----------|----------|
| | | |
| CONTRAST | weaker | stronger |

- 2 Press the button to adjust the level.

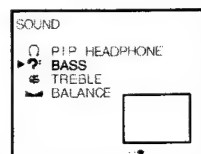
Note

The TV screen illustration above is for models with the TELETEXT feature. Models without that feature display "PIP CONTRAST".

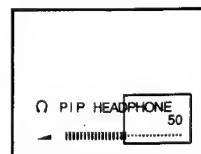
To listen to the sound of sub-picture

- 1 Put a headphone plug (not supplied) in the head phone jack on the TV set.

- 2 Press the button. The sound control menu appears.



- 3 Press the button to move the cursor (▶) to " PIP HEADPHONE" and press the button to adjust the level.



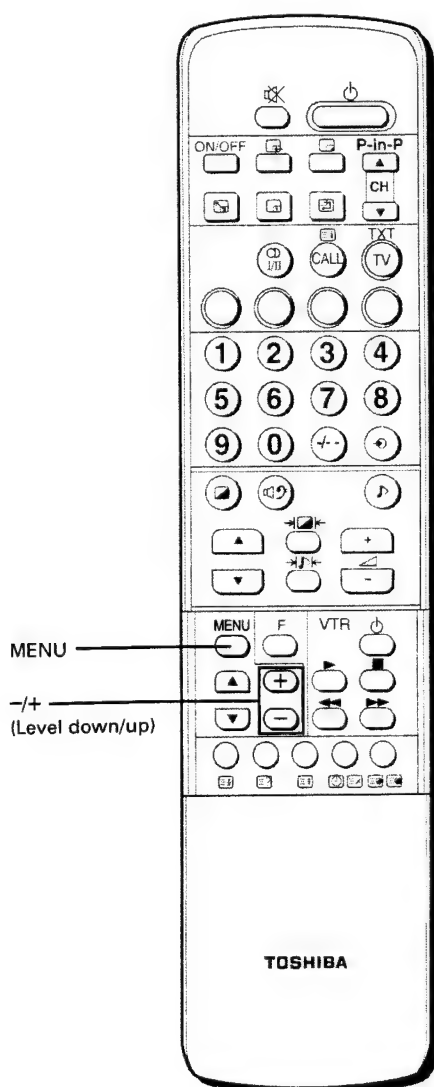
Notes

- Output from the head phone jack is monaural.
- When a stereo/bilingual broadcast is received on the main picture, output from the head phone jack is the (monaural) sound (page 21) if you press the button to switch between the main and sub pictures.
- There is no output from the head phone jack when the PIP function is not activated.

Selecting the Language for the OSD (On-Screen Display)

To select the language for the OSD

Use this function to switch the language for the OSD to either English, Mandarin or Malayan.



To select the language for the OSD

- 1 Press the MENU button repeatedly to call up the LANGUAGE selection menu on the screen.

LANGUAGE
ENGLISH
中文
MELAYU

- 2 Press the level down (-)/up (+) buttons to select the desired language. The selected language is displayed in magenta and the screen menu is automatically displayed in that language.

语言
ENGLISH
中文
MELAYU

Ex. English display

FUNCTION
▶GOTIMER 00:00
OFF 00:00 P01
TEXT FAST LIST

Ex. Mandarin display

功能
▶定时
关 00:00
开 00:00 P01
图文电视 FAST LIST

Ex. Malayan display

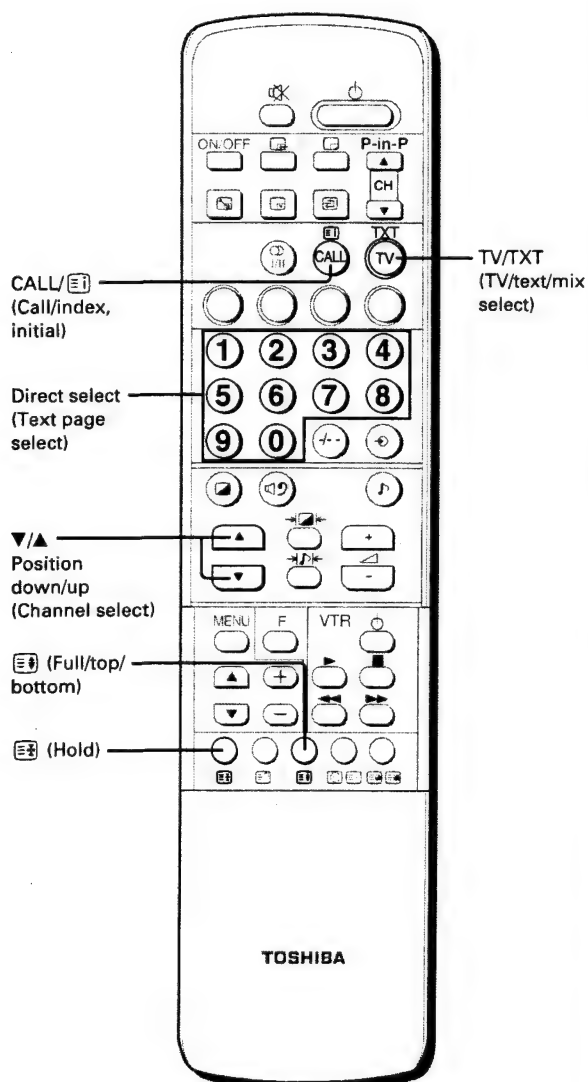
FUNGSI
▶GOPENENTU MASA
TUTUP 00:00
BUKA 00:00 P01
TEKS FAST LIST

VIEWING TELETEXT (48PJ5UE, 55PJ5UE and 61PJ5UE only)

Viewing Normal Text/ Use of the Teletext Buttons

- The TV is capable of showing both normal text and Fastext information on the screen. The Teletext buttons on the remote control have the same function for both.

To view normal text



To display a page of text

- 1 Select a TV station with the text service desired.
- 2 Press the TV/TXT button. The index page will appear.
- 3 Enter the 3-digit page number using the direct select buttons.
Ex. Page 10: Press 0, 1 and 0.

To superimpose the text on a TV picture (⏏)

Press the TV/TXT button again.

To return to the normal TV mode (⏏)

Press the TV/TXT button repeatedly until the text disappears.

To display an index/initial page (⏏)

Press the ⏏ button if no page number is displayed. The index page (FAST mode) or the preset initial page (LIST mode) will appear. Press again to turn off the page display.
For presetting an initial page, see page 30.

To go to the previous or next page (⏏ ⏏)

Press the position down ▼ button to switch to the previous page. Press the position up ▲ button to switch to the next page. The pages will cyclically change from P*00 to P*99.

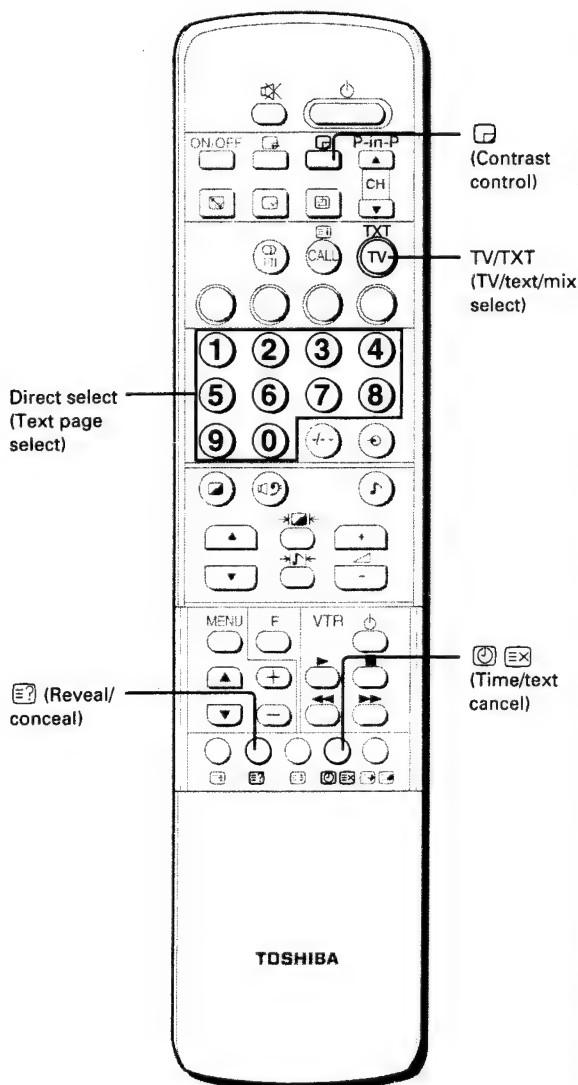
To enlarge the text display size (⏏)

Press the ⏏ button once to enlarge the top half of the page. Press again to enlarge the bottom half of the page, and again to return to the normal size.

To hold a page of text (⏏)

When a page is divided into sub pages, it is convenient to hold a given page. Press the ⏏ button to hold the page. STOP will appear in the top left of the screen. Press again to release the hold mode.

To view normal text (continued)



To select a page while viewing a normal TV picture ()

If you press the button in the text mode, a normal TV picture will be displayed. Enter the desired 3-digit page number using the direct select buttons, and the selected number will appear on the screen. To view the selected page, press the TV/TXT button.

To display news flashes ()

To view news flashes when they are broadcast, select the news flash page for the particular Teletext service (see the Teletext index page) and press the button. The news flashes will be displayed as they are broadcast. Press again to cancel the news flash display.

Note

The TV channel cannot be changed when the news flash is displayed. To change the channel, first press the TV/TXT button to cancel the text mode.

To reveal concealed text ()

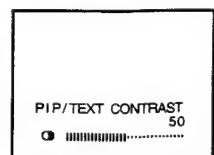
Some pages have sections that are concealed such as the answers to quizzes and the punchlines of jokes. To see the concealed part, press the button. Press again to conceal.

To display the time ()

To display the accurate time on the screen while watching a normal TV picture, press the button. Press again to turn off the time display.

To adjust the contrast of the teletext picture

- 1 Press the button to call up the display on the right.



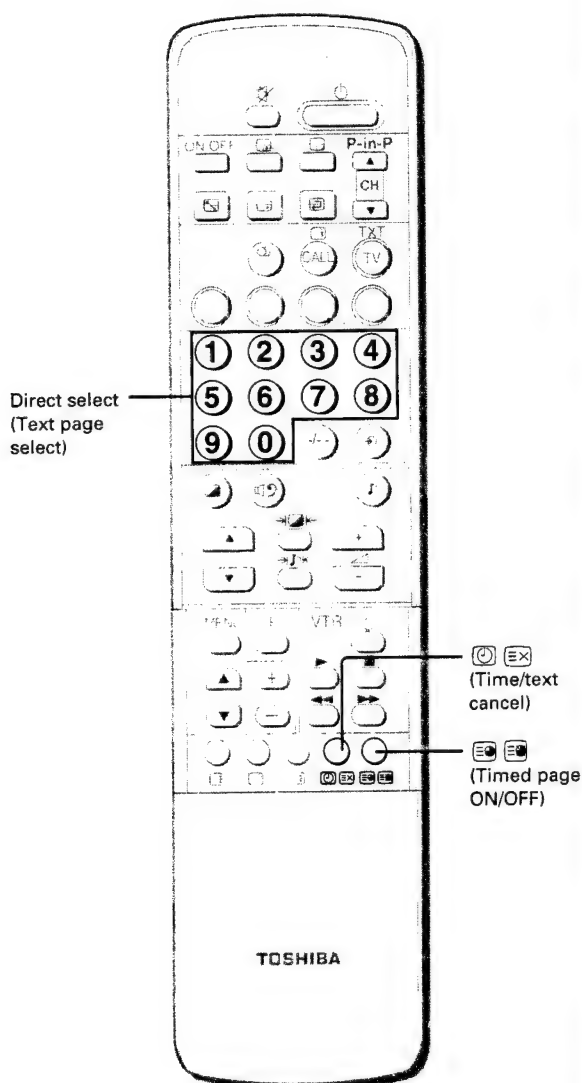
- 2 Press the button to adjust the level.

VIEWING TELETEX (48PJ5UE, 55PJ5UE and 61PJ5UE only)

Viewing Normal Text/ Use of the Teletext Buttons

(continued)

To view normal text (continued)



To display an alarm caption at the desired time ()

If you want to display an alarm caption at a given time, proceed as follows:

- 1 Select the desired Teletext alarm page number and press the button. T*** appears on the screen.

P100 TELETEX 05:48/42

T***

- 2 Press the direct select buttons to enter the time when you want the alarm caption displayed.
Ex. 11:00 am: Press 1, 1, 0 and 0.

P100 TELETEX 05:48/42

T11:00

The character T preceding the time digits will appear indicating the timed page is set.

- 3 Press the button to return to the normal TV picture.

At the preset time, the preset alarm caption page will be superimposed on a normal TV picture.

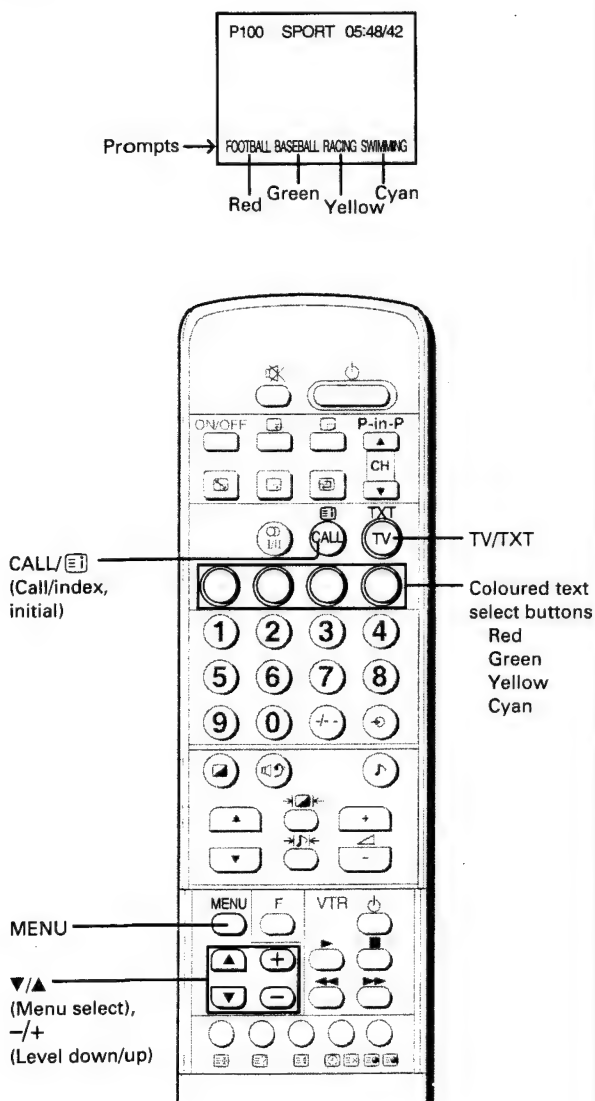
VIEWING TELETEXT (48PJ5UE, 55PJ5UE and 61PJ5UE only)

Viewing Fastext

- Fastext is a method of viewing Teletext pages by related subjects grouped by the broadcast studio. You can access any given topic shown on the screen simply by pressing the corresponding coloured text select button on the Remote Controller.

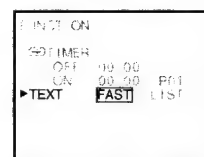
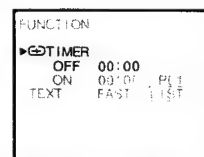
To view Fastext

When you select the FAST mode, four coloured prompts will appear at the bottom of the screen. The colours correspond to those of the text select buttons on the remote control. So, press the corresponding coloured text select button to go to the desired topic page instantly.



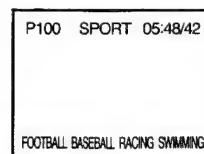
To select the FAST mode

- 1 Select a TV station with the desired FASTEXT service.
- 2 Press the MENU button repeatedly to call up the FUNCTION menu on the right.
- 3 Press the menu select ▼/▲ buttons to move the cursor (►) to "TEXT". Then, press the level down (-)/up (+) buttons to select "FAST" (Fastext mode).



To view Fastext

- 1 Press the TV/TXT button to select the text mode. Four coloured prompts will appear at the bottom of the screen.
- 2 Press the text select button whose colour corresponds to your desired topic. The screen will switch to the selected page.
- 3 Repeat step 2 to switch to the next topic you want to view.



To return to the normal TV mode

Press the TV/TXT button twice.

Press the □ button to display an index page. (See page 26.)

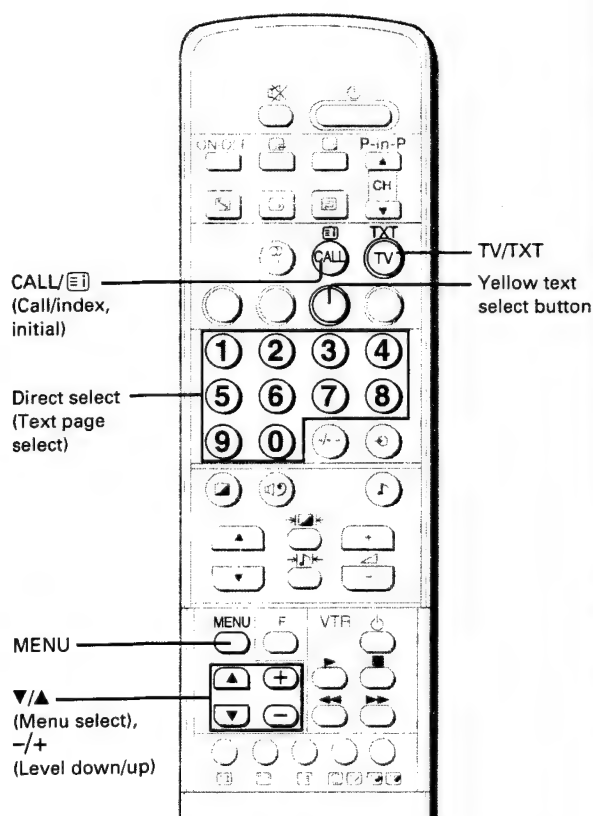
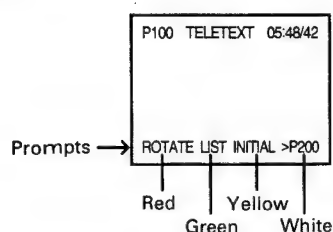
VIEWING TELETEXT (48PJ5UE, 55PJ5UE and 61PJ5UE only)

Viewing Preset Text Pages in the LIST Mode

- You can preset up to four of the most frequently used text pages and select these pages easily. In addition to the four pages, you can preset an initial page which will appear first each time you select the text mode.

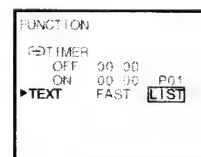
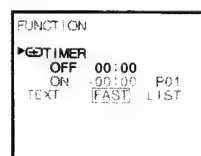
To preset and view the text pages in the LIST mode

Presetting is possible only for programme numbers 1 through 9.



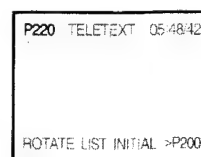
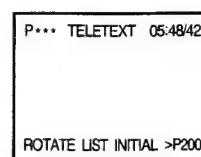
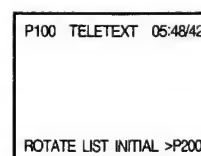
To select the LIST mode

- Select a TV station with the TEXT in the desired LIST mode service.
- Press the MENU button repeatedly to call up the FUNCTION menu on the right.
- Press the menu select ▼/▲ buttons to move the cursor (►) to "TEXT". Then, press the level down (-)/up (+) buttons to select "LIST" (LIST mode).



To preset an initial page

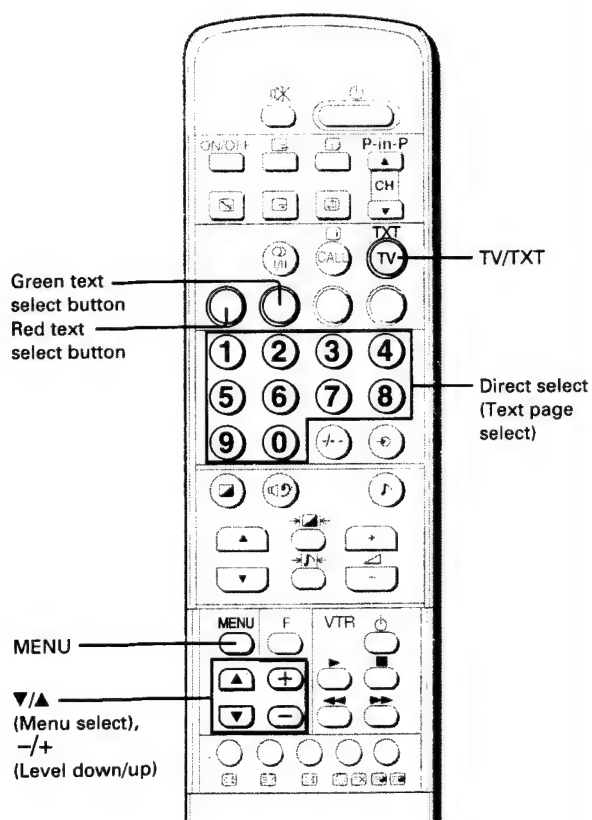
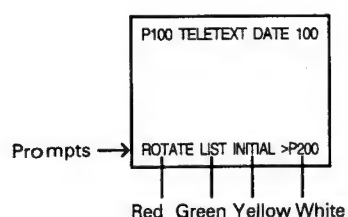
- Press the TV/TXT button to select the text mode. The display on the right will appear.
 - Press the **yellow** text select button. P*** in red will appear on the screen.
 - Press the direct select buttons to enter the 3-digit page number that you want to preset as an initial page. Ex. page 220 : Press 2, 2 and 0.
- The selected page will turn to white and will be stored in memory.



Note

For programme numbers 10 and higher, the initial page is fixed to 100, and the LIST function does not operate. Press the □ button to display an initial page. (See page 26.)

To preset and view the text pages in the LIST mode (continued)



To preset desired pages

- 1 Press the **green** text select button.

The page number at the right bottom will turn to purple.

P100 TELETEXT 05:48:42

ROTATE LIST INITIAL >P200

- 2 Enter the 3-digit page number you want to preset by using the direct select buttons, and press the **green** text select button. The selected page will be stored in memory.

P100 TELETEXT 05:48:42

ROTATE LIST INITIAL >P220

- 3 Repeat steps 1 and 2 to preset other three pages.

To view the preset pages

Press the **red** text select button.

By pressing the red text select button, the preset pages will appear cyclically.

P100 TELETEXT 05:48:42

ROTATE LIST INITIAL >P220

Note

For programme numbers 10 and higher, pages 100, 200, 300 and 400 are always selected in the LIST mode. You cannot change the presetting.

CONNECTING OTHER EQUIPMENT

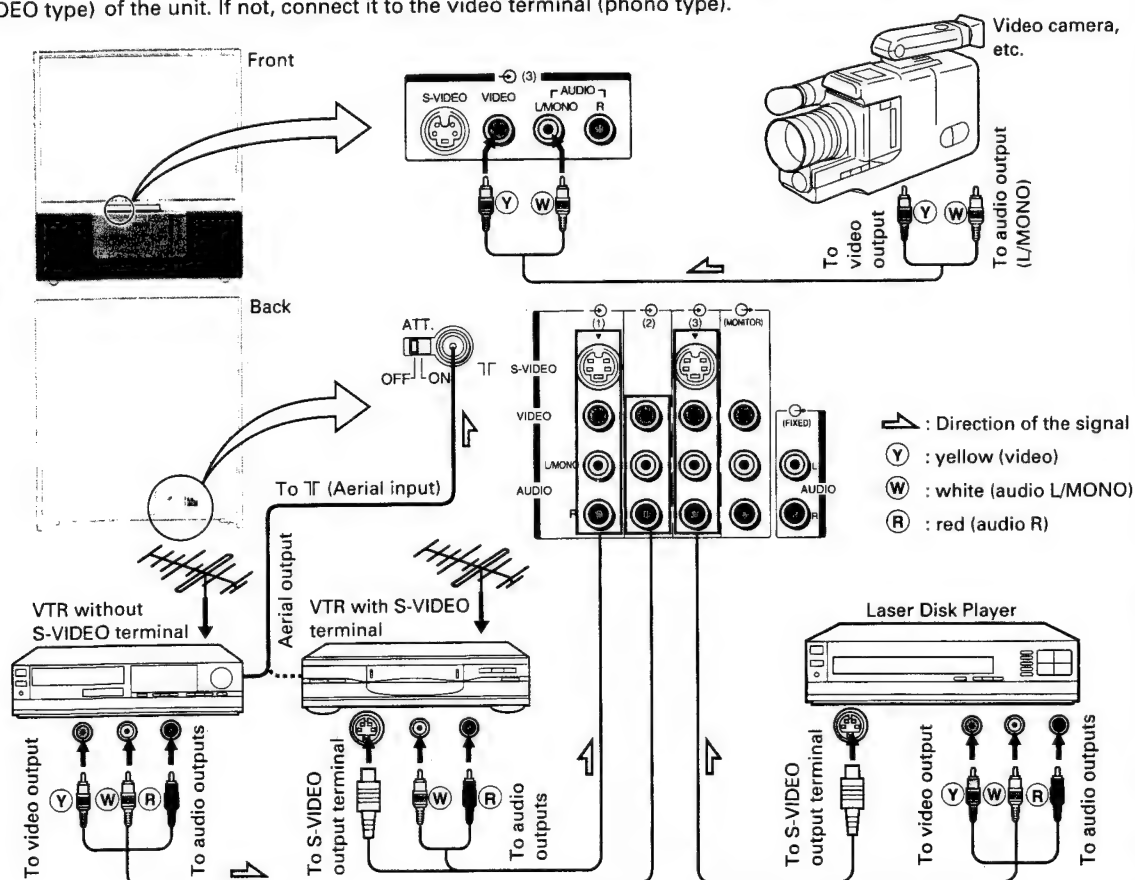
External Equipment Connections

- The following describes how to use and connect the TV with other AV equipment. Refer to the owner's manual of the equipment to be connected as well.

To connect video and audio equipment

You can connect video equipments such as a VTR and video camera to this TV and enjoy the high quality picture.

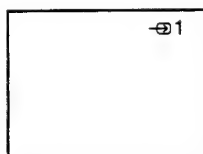
If your video equipment has an S-VIDEO output aerial, connect it to the S-VIDEO input terminal (special S-VIDEO type) of the unit. If not, connect it to the video terminal (phono type).



To select the input

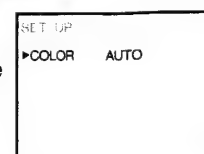
Press the button on the TV set or the remote control repeatedly until you see the appropriate input indicator on the screen; (1), video 1 input), (2), video 2 input), (3), video 3 input) and the programme number appear in sequence.

To return to aerial input, press the button to display a TV picture with a programme number.



If the colour of video input is abnormal

The colour system setting may be incorrect. Press the MENU button repeatedly to display the menu on the right. Confirm that "COLOR" is set to "AUTO". If not, select "AUTO" with the level down (-)/up (+) buttons.



Notes on the S-VIDEO terminal

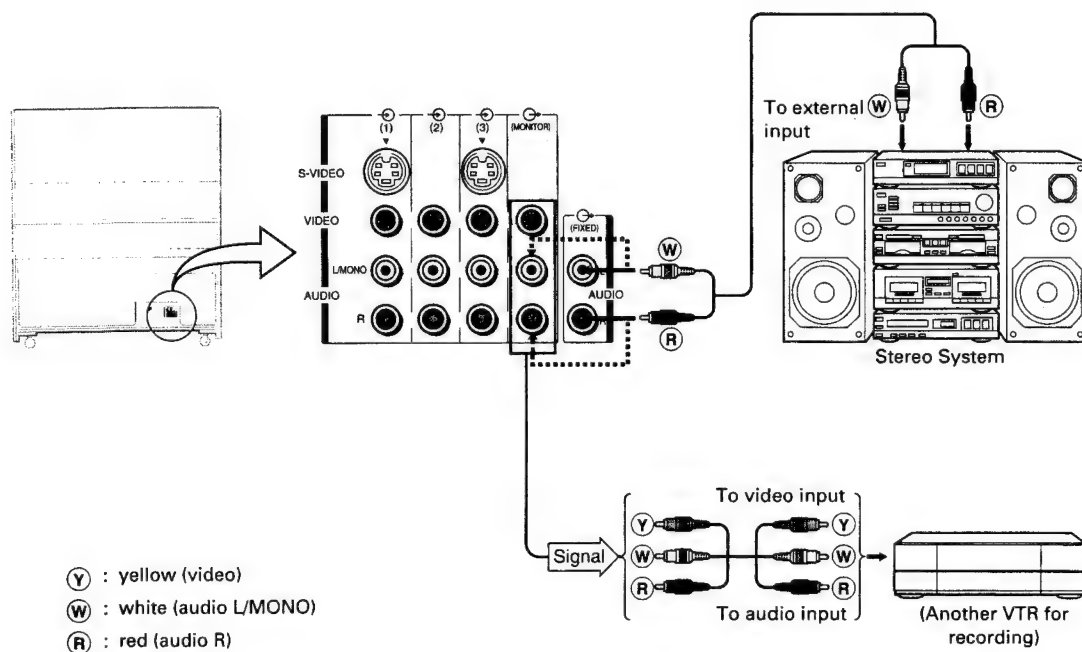
- Connect either the S-VIDEO input terminal or VIDEO input terminal, whichever terminal is used. Do not connect both of these terminals.
- As regards the input terminals of (3), connect either the front or rear terminals but not both.

Note on the video 3 VIDEO terminal

Connect either the video 3 VIDEO terminal on the front or one on the rear.

To connect video and audio equipment (continued)

You can connect a stereo system to the MONITOR and FIXED AUDIO output terminals (phono type) on the TV to enjoy a high-quality sound from the stereo system. The MONITOR output terminals output the video and audio signals being monitored on the TV. The output audio signal level is fixed.



* Except for personal use, you are not allowed to use video or sound you have recorded without consent of the owner of copyright according to the Copyright Law.

Note:

The TELETEXT signal cannot be output from the MONITOR (VIDEO) output terminal. (Teletext is featured only for 48PJ5UE.)

OTHER

A Guide to Simple Problem Solving

- Before calling service personnel, please check the following chart for a possible cause to the trouble you are experiencing.

| Symptom | Check these things |
|----------------------------------|---|
| Power is not turned on. | <ul style="list-style-type: none"> • Be sure the power cord is plugged in. |
| No sound | <ul style="list-style-type: none"> • Headphones may be plugged in. |
| Poor colour/tint | <ul style="list-style-type: none"> • May be the misadjustment for contrast, colour and tint. |
| Spots appear on the screen. | <ul style="list-style-type: none"> • May be jamming from cars, motorcycles, electric trains, high tension lines, neon signs, hair dryers, etc. |
| Lines appear on the screen. | <ul style="list-style-type: none"> • May be jamming from other TV receivers, personal computers, and TV games, as well as interference from radio station. |
| Double or triple images | <ul style="list-style-type: none"> • May be due to broadcast waves reflected from mountains or buildings. • Check if the direction of the aerial has changed because of strong wind, etc. |
| Snowy picture | <ul style="list-style-type: none"> • The aerial lead-in may be broken or disconnected. • Check if the direction of the aerial has changed. |
| Remote Controller does not work. | <ul style="list-style-type: none"> • The batteries in the Remote Controller may be exhausted. • The batteries may be improperly installed. |

The following are not failures

| | |
|--|---|
| The cabinet clicks. | <ul style="list-style-type: none"> • The clicking is a creaking sound produced when the cabinet expands or contracts due to changes in the temperature. This will not affect the picture or sound. |
| Unevenness in colour sometimes develops in part of the screen. | <ul style="list-style-type: none"> • If the screen is set brightly, such unevenness in colour may occur depending upon the nature of the picture. The proper colour can be restored by reducing the contrast. Consult your local dealer. |

Broadcast Transmission Systems in Each Country

| Area | Country | System | |
|------------------|---|--------|-------|
| | | Colour | Sound |
| Asia M. E. | Bahrain, Kuwait, Israel, Oman, Qatar, United Arab Emirates, Yemen, etc. Indonesia, Malaysia, Singapore, Thailand, etc. | PAL | B/G |
| | China, etc. | PAL | D/K |
| | Hong Kong | PAL | I |
| | Iraq, Islamic Republic of Iran, Lebanon, Saudi Arabia, etc. | SECAM | B/G |
| | Russian Federation, etc. | SECAM | D/K |
| | Myanmar, etc. | NTSC | M |
| Oceania | Australia, New Zealand, etc. | PAL | B/G |
| Africa | Republic of South Africa, etc. | PAL | I |
| South America | Argentina, Paraguay, Uruguay, etc. | PAL | N |
| | Brazil | PAL | M |
| | Chile, Colombia, etc. | NTSC | M |

Notes: • "B/G" and "D/K" will be displayed as "BG" and "DK" on the screen.

PAL, SECAM and 358NTSC are different colour signal broadcast transmission systems applicable to different countries. 443NTSC is used in special VTRs to playback NTSC recorded video tapes through PAL television equipment.

[358NTSC = NTSC 3.58 MHz, 443NTSC = NTSC 4.43 MHz]


- Refer to the Specifications table on the back cover to find the receivable television systems for this TV.

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 2 OF THIS MANUAL.

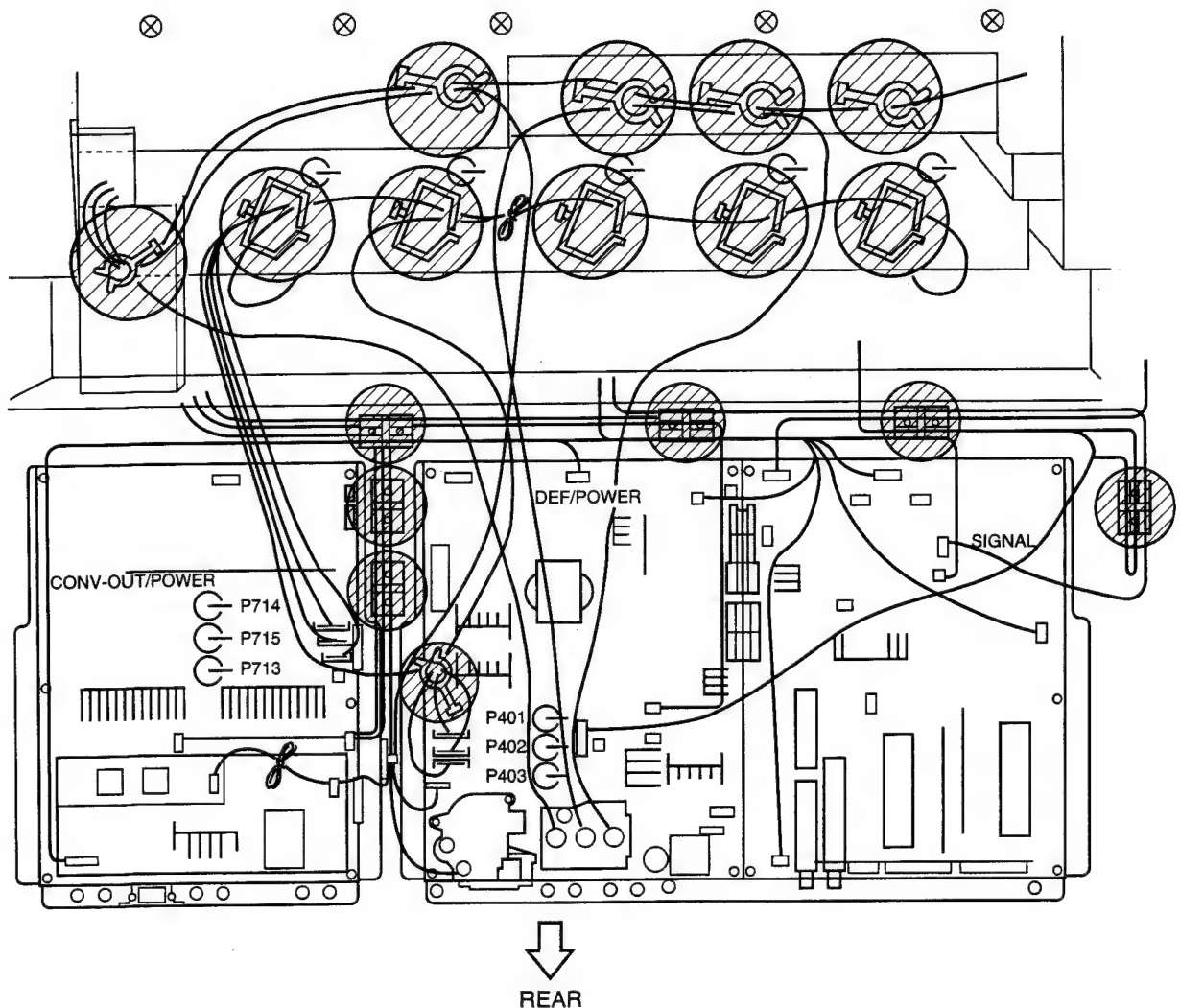
SETTING UP THE CHASSIS

In order to assure the performance, processed wires shall be replaced after the repair work.

Work procedures are as follows:

1. Remove the back board. (See page 58.)
2. Remove lead wires from 17 holders in  as illustrated.
3. Draw out the chassis.
4. Insert the front edge of the chassis into the groove where the back board has been inserted and make the chassis stand.
5. Put one screw on cabinet by depth of their length for fixing back board, and then, temporarily use them to hold the CONV/POWER chassis with wires tied to screws or insert the PVC band into the opening of main board frame to fix the main board chassis as shown in the figure 20. (See illustration on next page.)

After repair work finished, replace it in the opposite procedure.



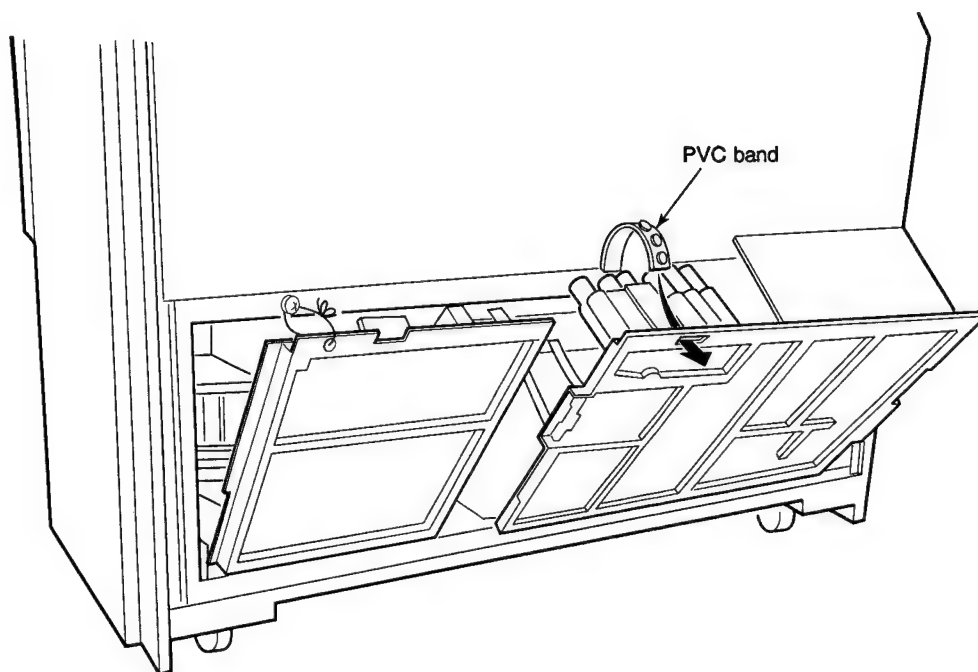
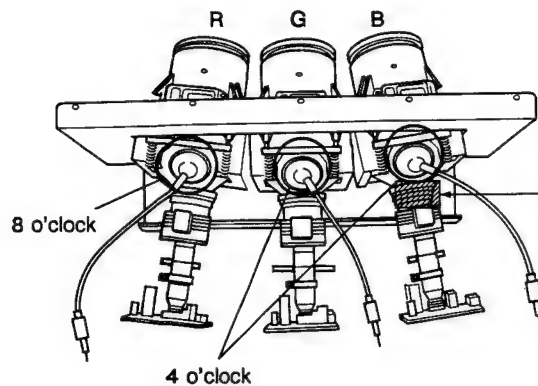


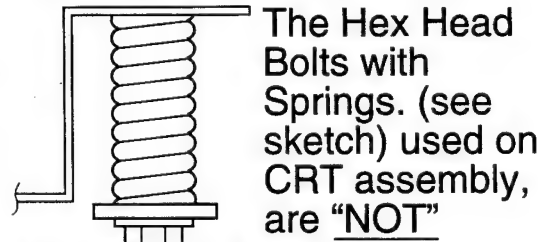
Fig. 20

CRT ASSEMBLY REPLACEMENT AND MOUNTING

CAUTION : DO NOT LOOSEN THE HEX HEAD BOLTS WITH SPRINGS (12 PCS), BECAUSE THOSE ARE FOR SEALING OF CRT COOLANT.

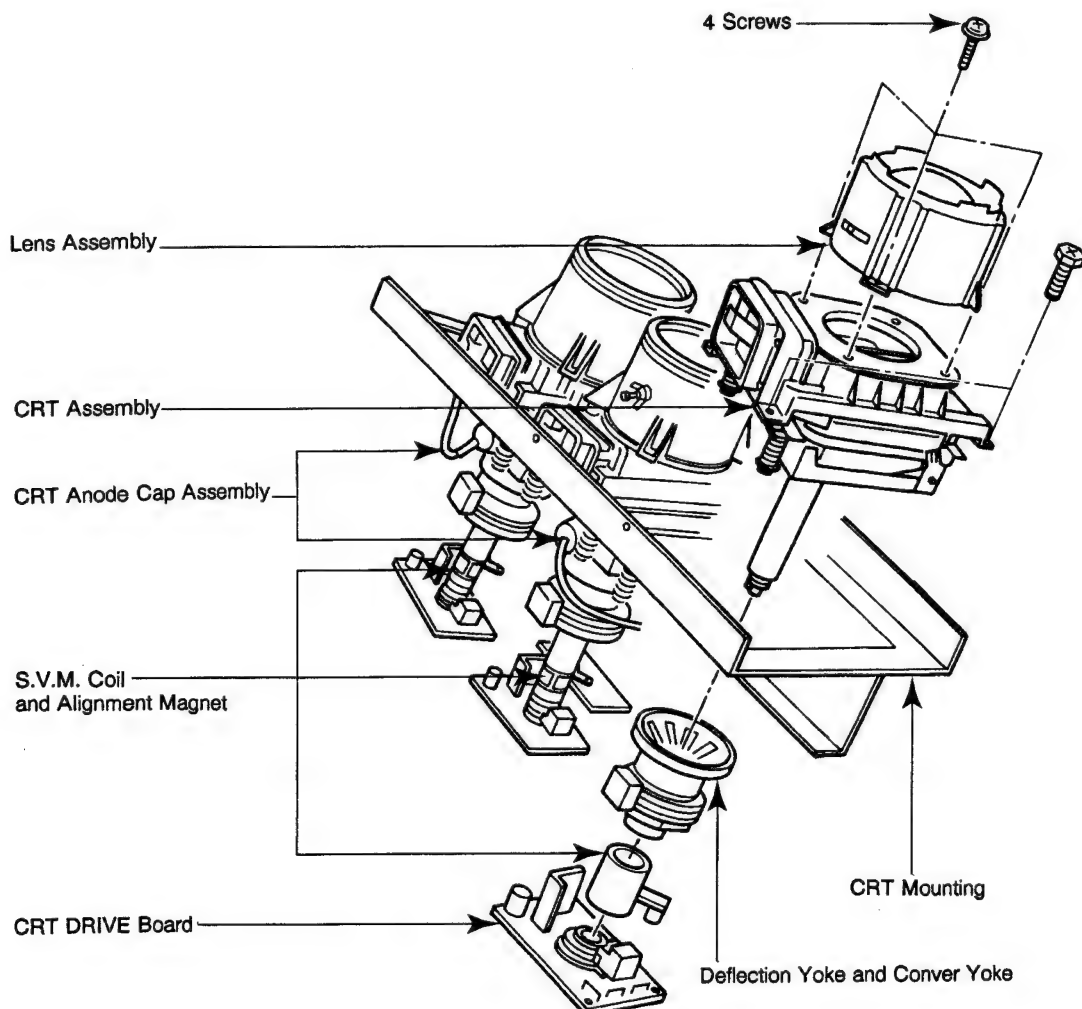


Attention Serviceman



The Hex Head Bolts with Springs. (see sketch) used on CRT assembly, are **"NOT"**

Adjustment Screws
DO NOT LOOSEN-FLUID LEAKAGE WILL OCCUR.



Lens and Neck Components View

TO REMOVE CRT (Same procedure for R, G, B)

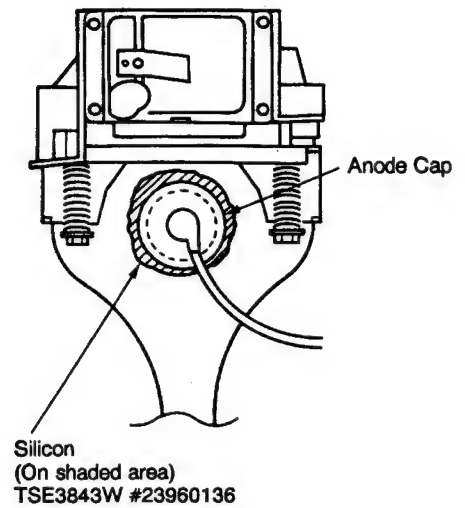
1. Remove CRT DRIVE Board, S. V. M. COIL and DEF. YOKE from CRT.
2. Remove Lens Assembly.
3. Detach CRT Anode Cap from CRT.
4. Remove CRT Assembly from CRT Mounting.

CRT REPLACEMENT (Same procedure for R, G, B)

Reverse the removal procedures except the followings.

1. Anode Cable should be replaced with new one.
2. Install silicon (T461B) to the CRT, replace the Anode cable and put enough silicon again on around the Anode Cap as illustrated.

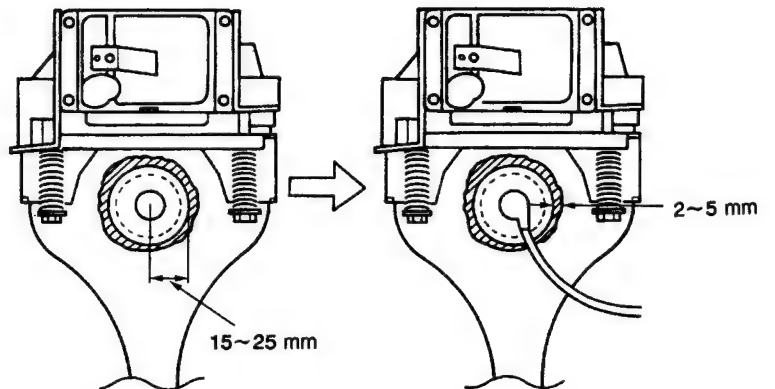
CAUTION: Align the Anode cable as illustrated on page 37. Setting of Anode Cables are illustrated on page 35.



ADJUSTING PROCEDURE IN REPLACING CRT

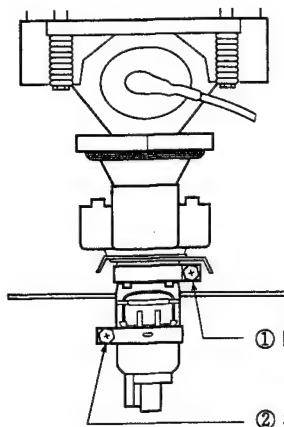
1. R.G.B. FOCUS ADJUSTMENT (page 39.)
2. PICTURE TILT ADJUSTMENT (page 40.)
3. USER CONVERGENCE CENTER CHECK (page 14.)
4. CENTERING ADJUSTMENT (page 40.)
5. CONVERGENCE ADJUSTMENT (page 42.)
6. WHITE BALANCE ADJUSTMENT (page 54.)

Adjustments are complete.

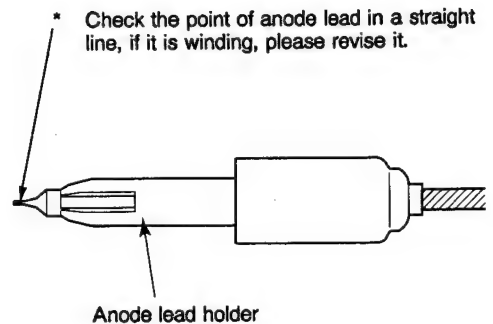


SERVICING PRECAUTION

1. Do not use a magnetized screw driver for screws of Deflection Yoke and Velocity Modulation Coil to avoid magnetization of electron gun.
2. Above caution should be applicable to three CRT's (R, G, B).



3. Magnetization of electron gun will degrade basic function and result in unbalance of right and left shift of user static convergence included in Set Menu, and result in no variable quantity.

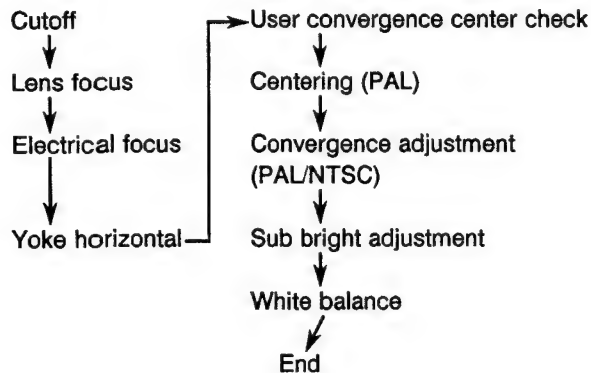


Remove the anode lead holder from old one and attach the holder again to new anode lead when replacing the anode cap assembly (CRT) or anode lead assembly (F.B.T.).

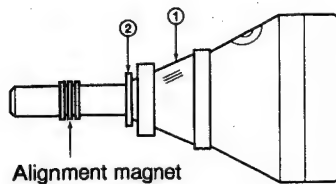
WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 2 OF THIS MANUAL.

PICTURE TUBE COMPONENTS ADJUSTMENT

ADJUSTING PROCEDURE IN REPLACING CRT



DESCRIPTION OF NECK COMPONENTS



- ① Deflection yoke and convergence yoke
The position on the neck is required most front (CRT funnel side) and the screw is fastened after rotating yoke adjusting picture tilt.
- ② Centering magnet
After adjusting picture tilt, picture position is finally fixed by this magnet.
In order to get maximum margin of user convergence control for center of screen, this magnet have to be used for center convergence adjustment.

PREPARATION

Operate the receiver for at least 5 minutes.

R, G, B FOCUS ADJUSTMENT

1. Select the adjustment mode. (See page 51.)
2. Press "↔" button to display the built-in cross-hatch.

3. Press "↔" and "↵" buttons to make the picture a single Red color.

☒ button to erase Red color
 ↔ button to erase Green color
 ↵ button to erase Blue color

4. Loosen the fasten screw and adjust Red lense focus to best focusing point of picture center. Then fasten the screw. (See Fig. a.)

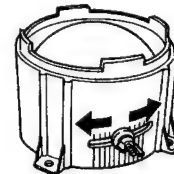
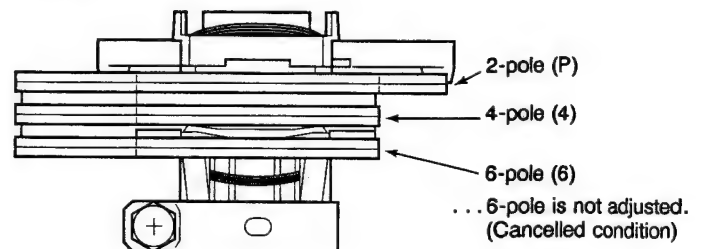


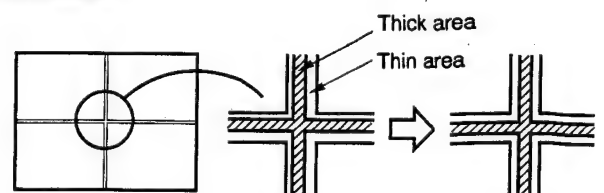
Fig. a

5. Adjust FOCUS VR "R" of FOCUS PAC to find best focusing point of picture center.
6. Repeat steps 3 to 5 for Green and Blue colors.

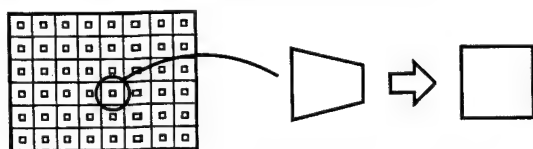
ALIGNMENT MAGNET ADJUSTMENT (This item will be made design modification (delete) without notice)



1. Set the 2-pole, 4-pole and 6-pole magnets to cancelled condition.
(To realize the cancelled position, set marking letters on tabs to match front to back.)
2. Receive test signal of white cross-bar.
3. Rotate Focus VR to just a little left from optimum focusing.
4. Adjust 2-pole magnet so that thick area of luminance is located to center of thin area of luminance.



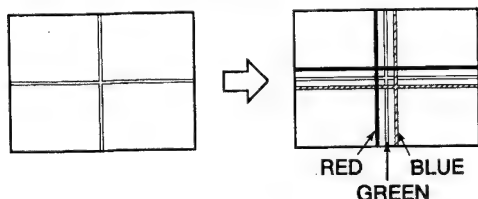
5. Rotate Focus VR counterclockwise to the just focusing.
6. Fix 2-pole magnet with adhesive.
7. Change test pattern to white cross-dot.
8. Rotate Focus VR to just a little right from optimum focusing.
9. Adjust 4-pole magnet for the square dot.



10. Rotate Focus VR counterclockwise for the just focusing.
11. Fix 4-pole magnet with adhesive.
12. Perform steps 1 to 11 for RED, GREEN and BLUE.

Note:

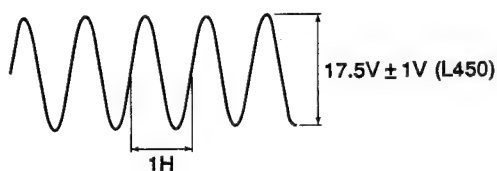
1. Before adjustment, displace previously red and blue of convergence by Convergence Menu in Set Up Menu for convenience.



2. This adjustment may be omitted due to design modification (Deletion of alignment magnet).
3. 6-pole magnet is no adjustment. Set it to cancelled condition.

DYNAMIC FOCUS PARABOLA ADJUSTMENT

1. Connect oscilloscope (10:1 probe) to terminal #2 of T400 and ground. (See Fig. C)
2. Turn on the TV set and adjust L450 (POWER DEF BOARD) for the peak-to-peak value of parabola wave as shown below.

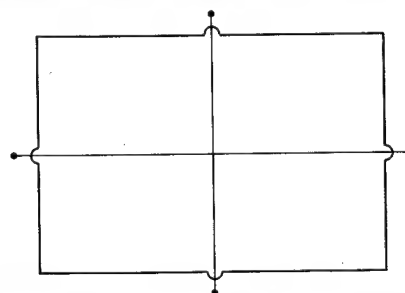


TILT ADJUSTMENT

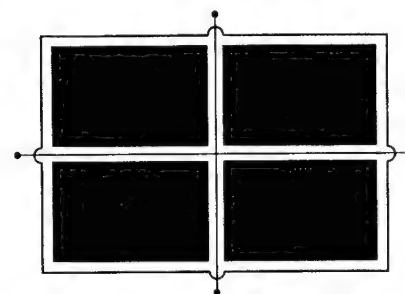
Rotate R, G, B deflection yoke so that picture becomes horizon, then fasten screw.

CENTERING ADJUSTMENT

1. Stretch a thread between two center slots of screen edge (top and bottom, left and right).



2. Select the adjustment mode. (See page 50.)
3. Press TV/VIDEO button on the Remote Control to display the white cross-bar.



4. Adjust G centering magnet so that the cross-bar pattern center comes to screen center.
5. Perform HEIGHT adjustment. (See page 54.)
6. Perform VERT. LINEARITY adjustment. (See page 35.)
7. Perform WIDTH adjustment. (See page 54.)
8. Check whole quality of green line.
9. Adjust R, B centering magnet so that the cross-bar pattern center comes to screen center.

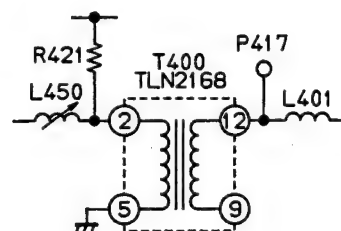
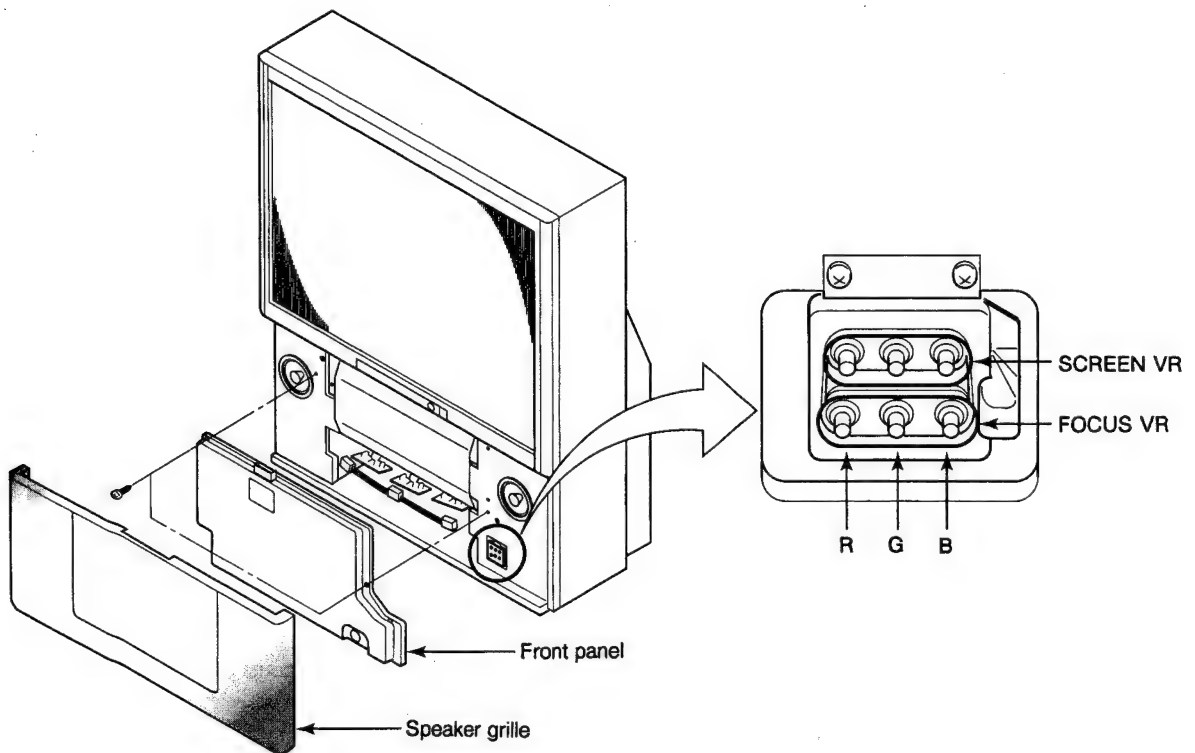


Fig. c

LOCATION OF SCREEN AND FOCUS VR'S

To remove the Speaker grille and Front panel.



CONVERGENCE ADJUSTMENT

3. PICTURE ADJUSTMENT

The adjustment are done on two screens; 50 Hz mode (PAL) and 60 Hz mode (NTSC). To synchronize correction wave to each frequency, receive the suitable signal.

3-1. Change of Memory (E²PROM)

Memory of Q713 E²PROM is nonvolatile, and adjusted data is stored. Since data in RAM of Q701 is eliminated with power OFF, the RAM is set by soft command of microcomputer QA01 at every power ON. The adjusted data which is obtained from screen-watching is once stored in RAM inside QA01. The whole data in RAM which is corrected on each adjusting point and is changed, is saved into E²PROM (Q713) as a fixed data. The data capacity per one screen requires 8k for 50 Hz mode (PAL), and 4k for 60 Hz mode (NTSC).

3-2. Service Mode

3-2-1. Outline

Service mode is controlled by software of microcomputer QA01, and is one of function of set.

This mode is designed so that ordinary user cannot use this, and special operation is required to use this.

Data change is done by direct shift (cursor display) of adjusting points; 50 Hz mode (PAL) 8 × 8/1 color and 60 Hz mode (NTSC) 8 × 8/1 color.

3-2-2. To Enter and to Exit

Press MUTE key on remote hand unit twice and keep pressing the key, press MENU key of set console.

Then service data will be displayed on top left of screen. Under the condition, press "↔" key on remote hand unit, and the screen shows crosshatch picture (Later, the first picture). Press again "↔" key, and the screen changes to crosshatch + data display (Later, second picture). This time changed data are automatically saved

Further, press "↔" key on remote, the screen returns to original picture.

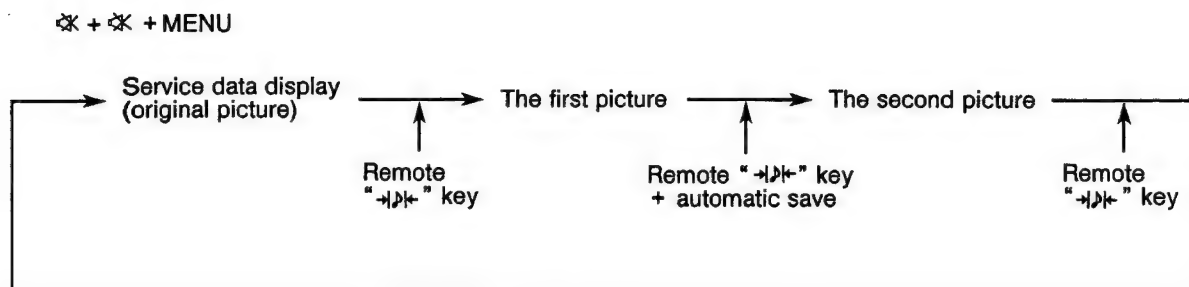
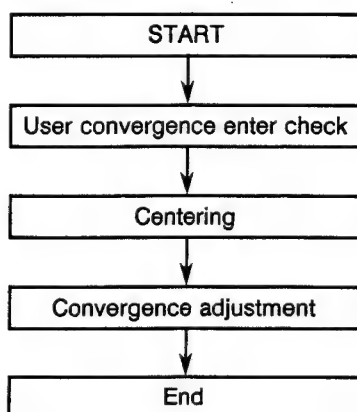


Fig. 14-2

Adjusting Procedure In Replacing Convergence Unit/Main Def



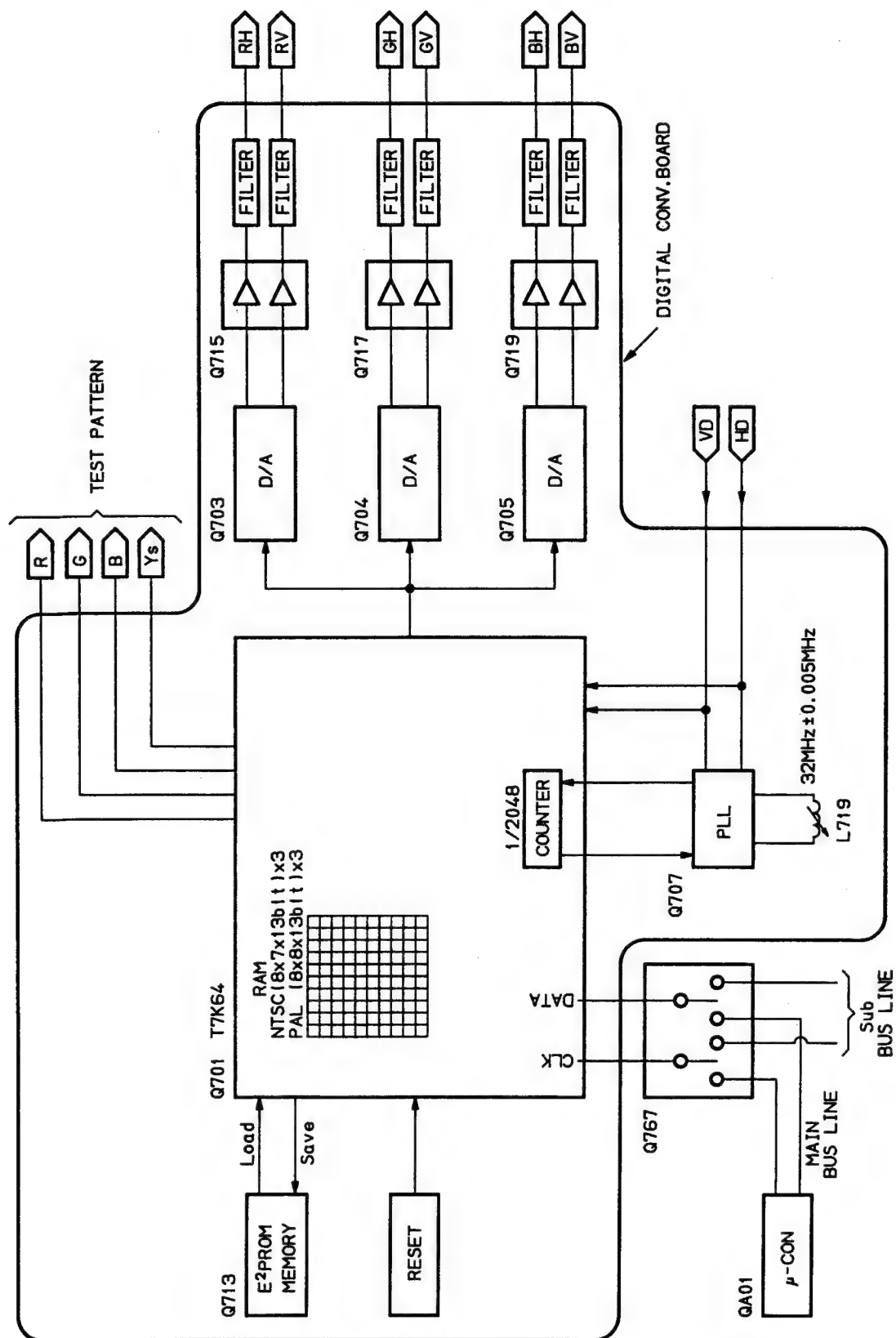


Fig. 14-1 Block diagram

3-2-3. Picture

a) 50 Hz mode (PAL) Correcting point: Horizontal 8 × Vertical 8 (Arrow marks denote correcting point)

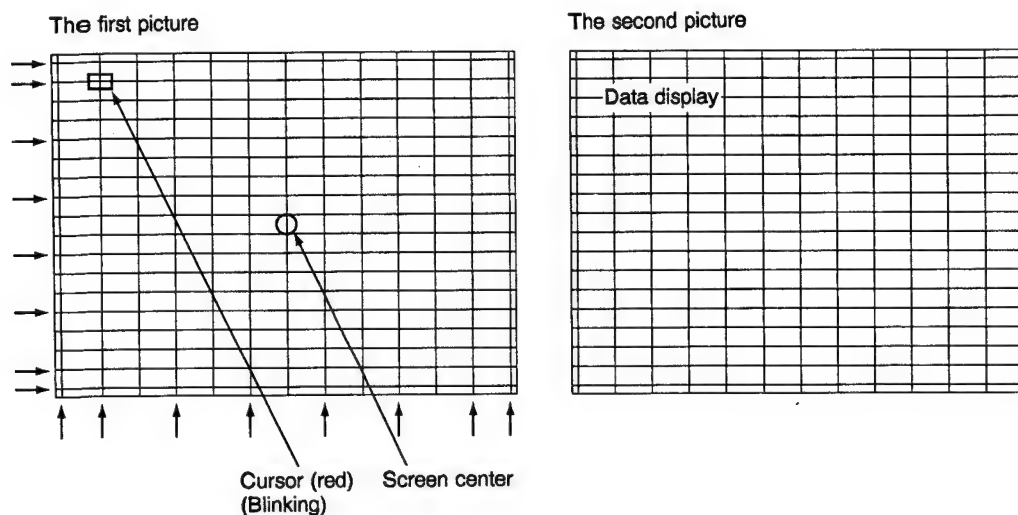


Fig. 14-4

The first picture

Crosshatch pattern. Pattern colors are three color display. Cursor is blinking in red. When changed, condition is last memory state.

Cursor is . . . Data change mode in lighting,
Cursor shifting mode in blinking.

Display color shows the color that data change is possible.

The second picture

When entering from the first picture to the second picture, correcting wave of convergence is muted for one second.

During this period, the changed data is transferred from RAM Q701 to E²PROM Q713, and saved.

The second picture is indicated with data on top left of the first picture, therefore, convergence cannot be adjusted by this picture.

Caution:

- Receive suitable signal for adjustment. Centering of green picture can be done in 50 Hz mode (PAL).
- Centering of 60 Hz mode (NTSC) can be adjusted by convergence adjustment. Besides, decide the center by cross pattern of static convergence in menu, and adjust convergence from center to circumference.

b) 60 Hz mode (NTSC) Correcting point: Horizontal 8 × Vertical 7 (Arrow marks denote correcting point)

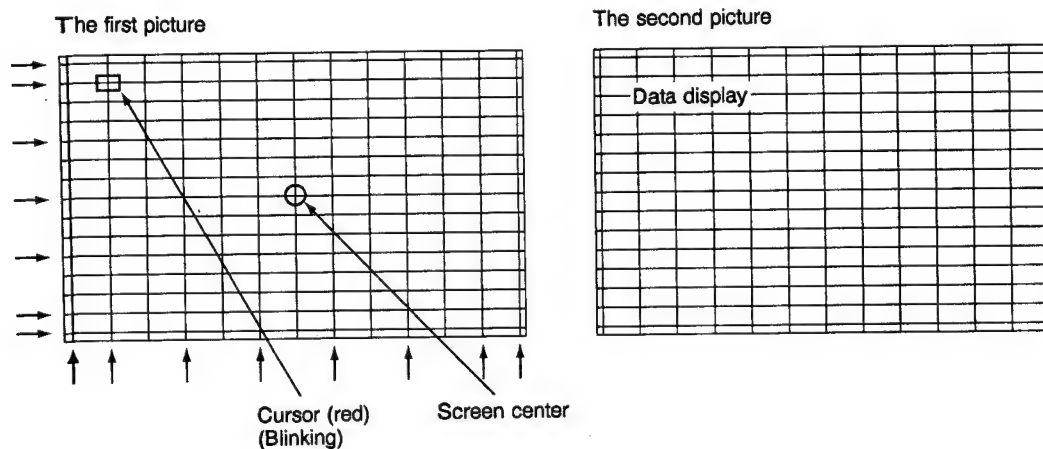


Fig. 14-3

The first picture

Crosshatch pattern. Pattern colors are three color display. Cursor is blinking in red. When changed, condition is last memory state.

Cursor is . . . Data change mode in lighting,
Cursor shifting mode in blinking.

Display color shows the color that data change is possible.

The second picture

When entering from the first picture to the second picture, correcting wave of convergence is muted for one second.

During this period, the changed data is transferred from RAM Q701 to E²PROM Q713, and saved.

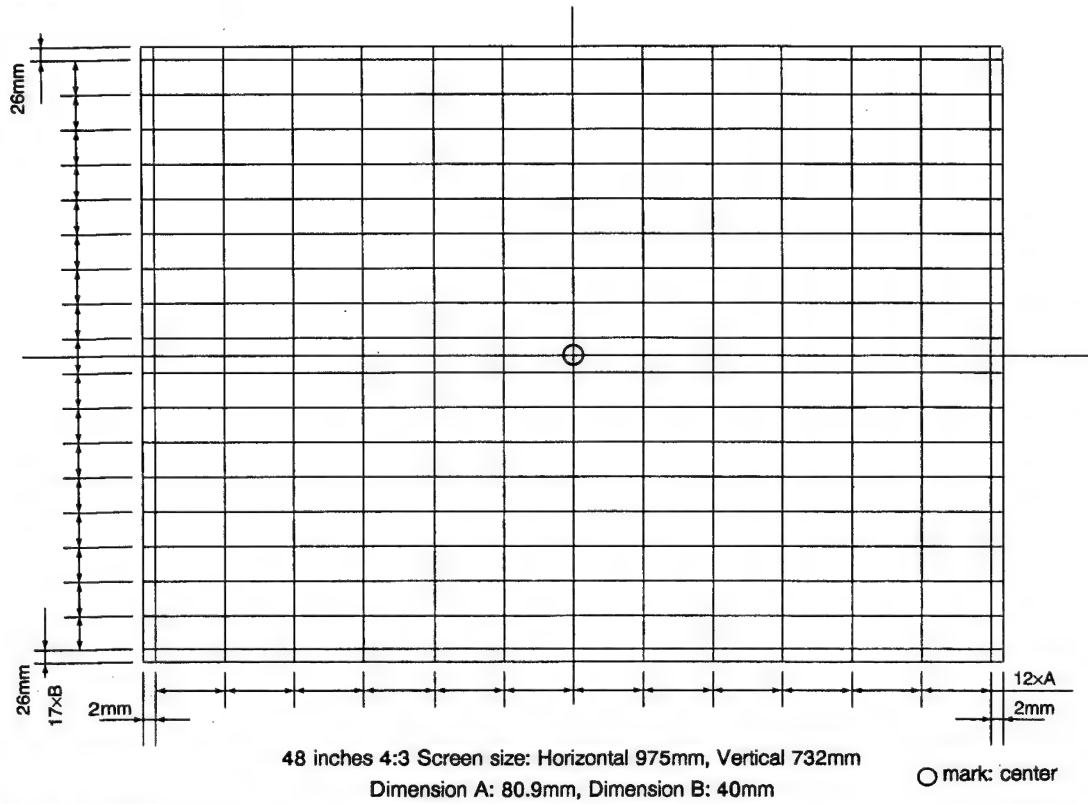
The second picture is indicated with data on top left of the first picture, therefore, convergence cannot be adjusted by this picture.

Caution:

- Receive suitable signal for adjustment. Decide the center by cross pattern of static convergence in menu, and adjust convergence from center to circumference.

4. ADJUSTING PICTURE DIMENSION (GREEN PICTURE)

1. 50 Hz mode (PAL)



2. 60 Hz mode (NTSC)

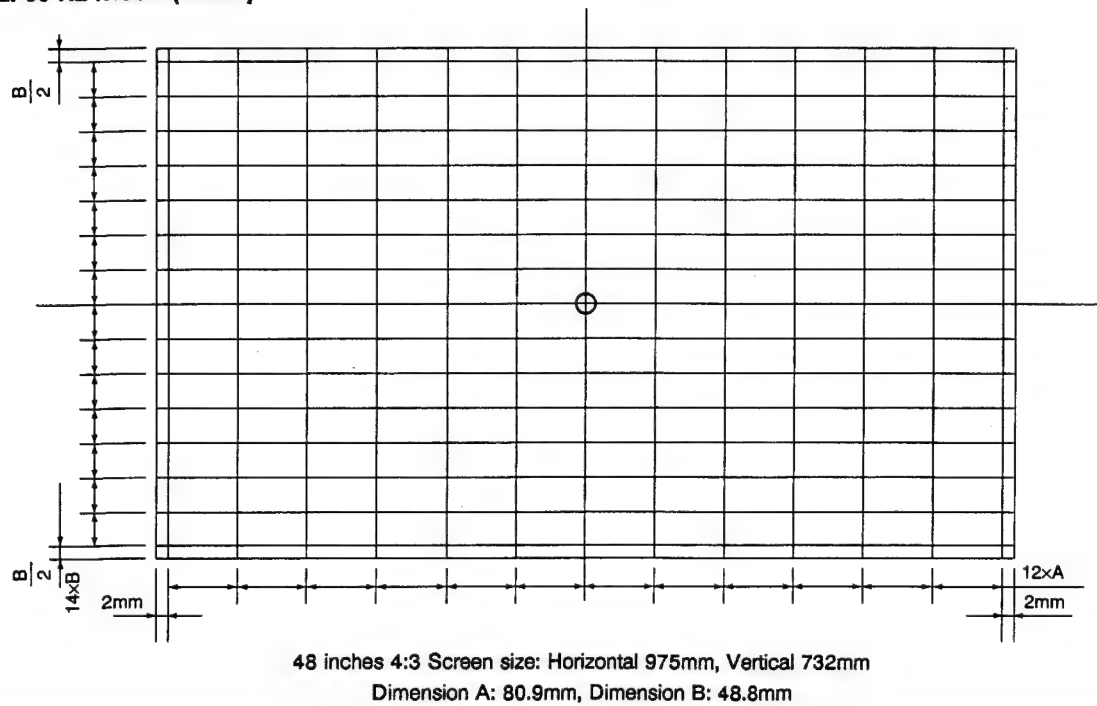
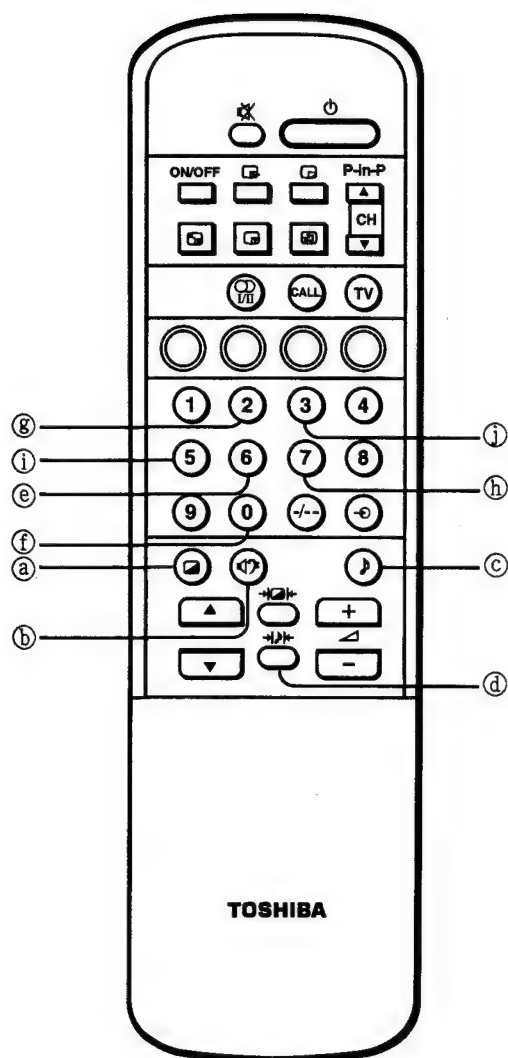


Fig. 14-5

5. KEY FUNCTION OF REMOTE CONTROL UNIT



- ① key .. Red test pattern ON/OFF
- ② key .. Green test pattern ON/OFF
- ③ key Blue test pattern ON/OFF
- ④ key .. Mode picture change-over
- ⑤ 6 key Cursor shift / data change mode change-over
- ⑥ 0 key Cursor down / adjusting point down
- ⑦ 2 key Cursor up / adjusting point up
- ⑧ 7 key Cursor right / adjusting point right
- ⑨ 5 key Cursor left / adjusting point left
- ⑩ 3 key Cursor color change

Fig. 14-6

CIRCUIT ADJUSTMENT

DEF/HV BOARD CHECK

HIGH VOLTAGE CHECK

CAUTION: There is no HIGH VOLTAGE ADJUSTMENT on this chassis. Checking should be done following the steps below.

1. Connect an accurate high voltage meter to the anode of the picture tube.
2. Turn on the receiver. Set the BRIGHTNESS and CONTRAST to minimum (zero beam current).
3. High voltage must be below 32.0 kV.
4. Vary the BRIGHTNESS to both extremes to be sure the high voltage does not exceed the limit under any conditions.

CAUTION:

When the following parts fail, check the High Voltage after replacing.

| Location No. | Name | Type |
|--------------|----------------|----------------------|
| T461 | Flyback Trans. | TFB3078AD |
| D489 | Zener Diode | MTZJ3.6B or UZ3.6BSB |
| Q480 | Transistor | 2SC2023 |
| Q483 | IC | TA75558S |
| R435 | Resistor | 33k ohm, $\pm 5\%$ |
| R489 | Resistor | 3.3k ohm, $\pm 5\%$ |
| R490 | Resistor | 3.3k ohm, $\pm 5\%$ |
| R450 | VR | 1k ohm |
| C440 | Capacitor | 1000pF, $\pm 3\%$ |
| C443 | Capacitor | 6800pF, $\pm 3\%$ |
| C444 | Capacitor | 5100pF, $\pm 3\%$ |

ANODE VOLTAGE MEASURING METHOD

CAUTION: Take extra precaution when measuring this high voltage. High voltages are also present in surrounding circuit boards (CRT DRIVE assembly, DEFLECTION assembly, and POWER SUPPLY assembly).

1. Disconnect the FBT anode cable as outlined below. Measure high voltage at the point where the cable enters the FBT.
2. Holding the rubber cover firmly, turn it counterclockwise and check that the lock has been disengaged. (See Fig. b.)
3. Determine the extent of the rubber cover before disconnecting the cable.
4. Pull straight up the anode cable to disconnect.
5. When reconnecting the cable, proceed in the reverse order.
After reconnecting, tug on the cable to check that it is secure.

FS CIRCUIT CHECK

The Fail Safe (FS) circuit check is indispensable for the final check in servicing. Checking should be done following the steps below.

1. Turn the receiver on.
2. Temporarily short TP- ® and TP- ☒ on the DEF/POWER Board with a jumper wire. Raster and sound will disappear.
3. The receiver must remain in this state even after removing the jumper wire. This is the evidence that the FS circuit is functioning properly.
4. To obtain a picture again, temporarily turn the receiver off and allow the FS circuit more than 5 seconds to reset. Then turn the receiver on to produce a normal picture.

Troubleshooting Guide for Fail Safe Circuit

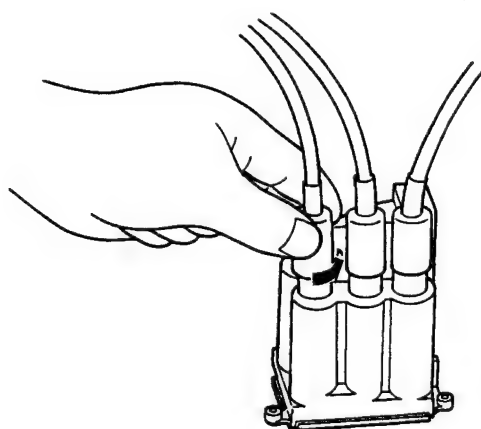
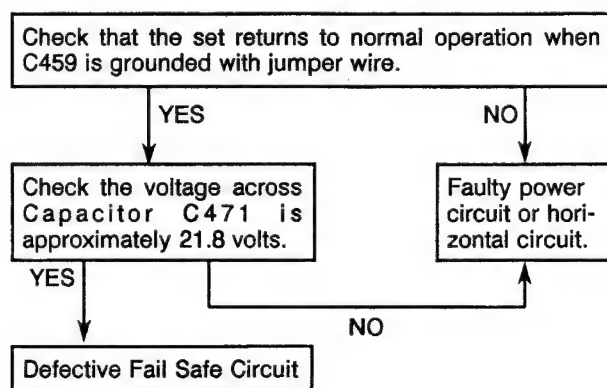
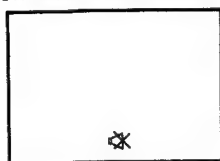


Fig. b

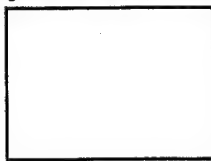
SERVICE MODE GENERAL INSTRUCTIONS

1. ENTERING TO SERVICE MODE

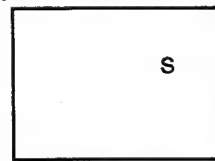
1) Press MUTE button once on Remote Control.



2) Press MUTE button again to keep pressing.



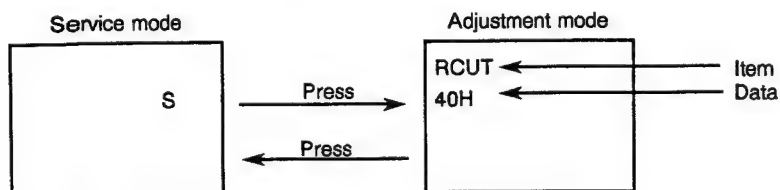
3) Keep pressing the MUTE button, press MENU button on TV set.



(Service mode display)

2. DISPLAYING THE ADJUSTMENT MENU

1) Press MENU button on TV.



3. SELECTING THE ADJUSTING ITEMS

- 1) Every pressing of CHANNEL ▲ button changes the adjustment items in the following order. (▼ button for reverse order.)

| Item | Name of adjustment | Data | | |
|------|------------------------|-------------|------------|---------|
| | | PRESET DATA | 48PJ5UH/UC | 48PJ5UE |
| RCUT | R CUTOFF | 40 | ← | ← |
| GCUT | G CUTOFF | 40 | ← | ← |
| BCUT | B CUTOFF | 40 | ← | ← |
| RDRV | R DRIVE | 40 | ← | ← |
| BDRV | B DRIVE | 40 | ← | ← |
| BRTC | SUB-BRIGHT CENTER | 6F | ← | ← |
| TNTC | SUB-TINT CENTER | 4A | ← | ← |
| COLS | SUB-COLOR CENTER SECAM | 35 | ← | ← |
| SCOL | SUB-COLOR | 10 | ← | ← |
| COLP | SUB-COLOR CENTER PAL | 35 | ← | ← |
| SCNT | SUB CONTRAST | 09 | ← | ← |
| RGBB | RGB BRIGHTNESS | 20 | ← | ← |
| HPOS | 50Hz H-POS | 0A | ← | ← |
| VPOS | 50Hz V-POS | 04 | ← | ← |
| HIT | 50Hz HEIGHT | 58 | ← | ← |
| HITS | 60Hz HEIGHT | 55 | ← | ← |
| VLIN | 50Hz V-LINEARITY | 12 | ← | ← |
| NVLI | 60Hz V. LINI. | 12 | ← | ← |
| NWID | 60Hz PICTURE WIDE | 18 | ← | ← |
| BELL | SECAM BELL | 70 | ← | ← |
| SRY | SECAM R-Y | 08 | ← | ← |
| SBY | SECAM B-Y | 08 | ← | ← |

4. ADJUSTING THE DATA

- 1) Pressing of VOLUME ▲ or ▼ button will change the value of data in the range from 00H to FFH. The variable range depends on the adjusting item.

5. EXIT FROM SERVICE MODE

- 1) Press POWER button to turn off the TV once.

6. OTHER SERVICE FUNCTIONS

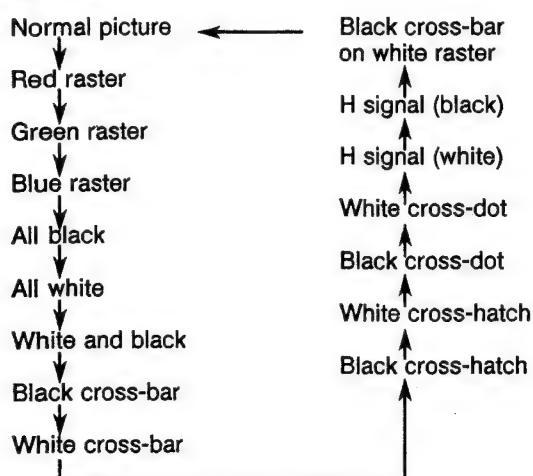
The following key entry during display of adjustment menu provides special functions.

- 1) TV/VIDEO button (on TV) : VIDEO signal ON/OFF
- 2) TV/VIDEO button (on Remote) : Test signal selection
- 3) 8 button : Test sound signal ON/OFF (1 kHz)
- 4) 9 button : Self diagnostic display ON/OFF
- 5) CALL button +
CHANNEL ▲ button (on TV) : Initialization of the MEMORY (QA02)

CAUTION: Never try to perform initialization unless you have changed the memory IC.

TEST SIGNAL SELECTION

- 1) Every pressing of TV/VIDEO button on the Remote Control changes the built-in test patterns on screen in the following order.

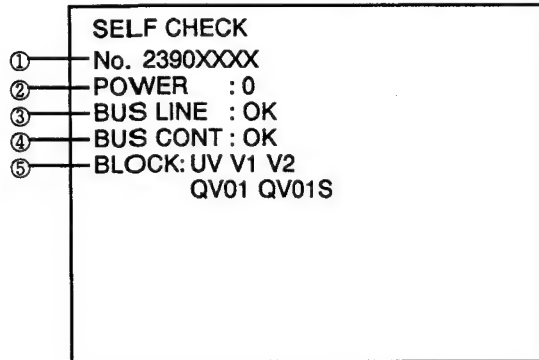


Note: If the video cable is connected to the VIDEO INPUT jack, the built-in pattern signals are not displayed.

| Signals | Picture |
|---|---------|
| <ul style="list-style-type: none"> • Red raster • Green raster • Blue raster • All Black • All White | |
| <ul style="list-style-type: none"> • Black & White | |
| <ul style="list-style-type: none"> • Black cross-bar • White cross-bar • Black cross-bar on green raster | |
| <ul style="list-style-type: none"> • Black cross-hatch • White cross-hatch | |
| <ul style="list-style-type: none"> • Black cross-dot • White cross-dot | |
| <ul style="list-style-type: none"> • H signal (white) • H signal (black) | |

SELF DIAGNOSTIC FUNCTION

- 1) Press "9" button on Remote Control during display of adjustment menu.
The diagnosis will begin to check if interface among IC's are executed properly.
- 2) During diagnosis, the following displays are shown.



- ① Part number of microprocessor (QA01)
- ② Operation number of protection circuit (current limiter)
- ③ BUS line check

| | | |
|---|-----------------|-----------------------|
| ┌ | "OK" | Normal |
| └ | "SCL-GND" | SCL-GND short circuit |
| | "SDA-GND" | SDA-GND short circuit |
| | "SCL-SDA" | SCL-SDA short circuit |
- ④ BUS line ACK (acknowledge) check


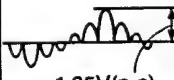
| | |
|--|--------|
| "OK" | Normal |
| Display of Location Number (Ex. QA02) ... NG | |
| (Failure place to be displayed) | |
| QA02 NG, Q501NG, H001NG, QG01NG, QV01NG, Q302NG, QZ01NG, H002NG, QQ01NG, HY01NG, <u>QY03NG, Qr04NG, QY05NG</u> , Q701NG QT01NG | |
| IN PIP UNIT | |

Note: The indication of failure place is only one place though failure places are plural. When repair of a failure place finishes, the next failure place is indicated. (The order of priority of indication is left side.)
- ⑤ Sync. signal check

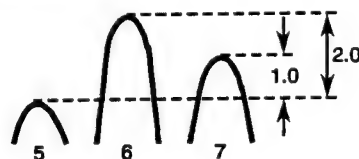
| | |
|------------------|----------|
| Green display .. | Normal |
| Cyan display ... | No check |
| Red display | NG |

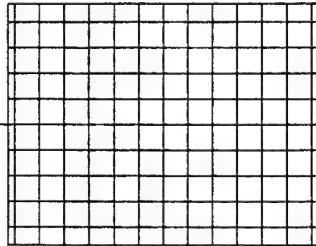
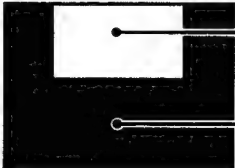
SERVICE MODE ADJUSTMENT

ADJUSTMENT OF VIDEO-CHROMA SYSTEM

| Symbol | Name | Setting | Input signal | Measurement point | Instrument | Adjustment procedure | Adjustment standard |
|--------|-----------------------|--|------------------------|----------------------------------|--------------|---|--|
| BELL | BELL FILTER | | SECAM COLOR BAR | QQ01 #2 (TPM01) | Synchroscope | 1. Adjust the amplitude of color bar to the flat level with [BELL]. | $100 \pm 10\%$ |
| SRY | SECAM R-Y BLACK LEVEL | DYNAMIC MODE | SECAM COLOR BAR | Q501 #55 (TP501) | Synchroscope | 1. Adjust the black & white signal level to the H.BLK level with [SRY]. | $0 \pm 40\text{mV}$ |
| SBY | SECAM B-Y BLACK LEVEL | DYNAMIC MODE | SECAM COLOR BAR | Q501 #55 (TP501) | Synchroscope | 1. Adjust the black & white signal level to the H.BLK level with [SBY]. | $0 \pm 40\text{mV}$ |
| SCNT | SUB Contrast | CONT: MAX Bright : Cent Color : Cent Tint : Cent | Sub bright signal | IC501 #55 (Monitor output) TP501 | Synchroscope | 1. Select the slave address [SCNT], and Y signal will be outputted from the monitor output. 2. Adjust the amplitude of the white level according to the Y signal and the pedestal level. | $2.5\text{V(p-p)} \pm 0.2\text{V(p-p)}$ |
| BRTC | SUB BRIGHT | CONT: MAX Bright : Cent Color : MIN | BLACK/WHITE signal | Picture adjustment | Visual check | SUB BRIGHT (BRTC) 1. Set user control to reset position. 2. Call up the adjustment mode display, then select the item BRTC. 3. Press the  button on Remote, and select the black and white pattern. 4. Adjust the data of item BRTC and set it just before the dark area lights. | |
| COLS | COLOR Control Center | CONT: Cent Bright : Cent Color : Cent Tint : Cent | SECAM color bar signal | IC501 #55 (Monitor output) | Synchroscope | 1. Select the slave address [COLS], and B-Y signal will be outputted from the monitor output. 2. Adjust the amplitude of the color bar output. | $4.2\text{V(p-p)} \pm 0.2\text{V(p-p)}$ |
| SCOL | SUB COLOR NTSC | CONT: Cent Bright : Cent Color : Cent Tint : Cent | Sub bright signal | IC501 #55 (Monitor output) | Synchroscope | 1. This item must be adjusted after the slave addresses 30 [TNTC] and [COLS] have been adjusted. 2. Select the slave address 28 [SCN], and B-Y signal will be outputted from the monitor output. 3. Adjust the amplitude of the rainbow color bar output. | $4.2\text{V(p-p)} \pm 0.2\text{V(p-p)}$  $1.35\text{V(p-p)} \pm 0.2\text{V(p-p)}$ |
| COLP | SUB COLOR PAL | CONT: Cent Bright : Cent Color : Cent Tint : Cent | PHILIPS Pattern | IC501 #55 (Monitor output) TP501 | Synchroscope | 1. By selecting slave address [COLP], B-Y signal is provided from monitor output. 2. Adjust amplitude of color bar part. | $4.2\text{V(p-p)} \pm 0.2\text{V(p-p)}$ |
| TNTC | TINT Control Center | CONT: MAX Bright : Cent Color : Cent Tint : Cent | Sub bright signal | IC501 #55 (Monitor output) TP501 | Synchroscope | 1. Select the slave address [TNTC], and B-Y signal will be outputted from the monitor output. 2. Adjust the amplitude of the rainbow color bar output. (See figure below.) | $-5^\circ \pm 5^\circ$ (Refer to the conversion table.) |
| RGBB | PIP BLACK LEVEL | | Sub bright signal | Picture adjustment | Visual check | 1. Adjust the number of black collapse of PIP sub bright signal. | 5 ± 1.5 |

Status of TCC 6.25

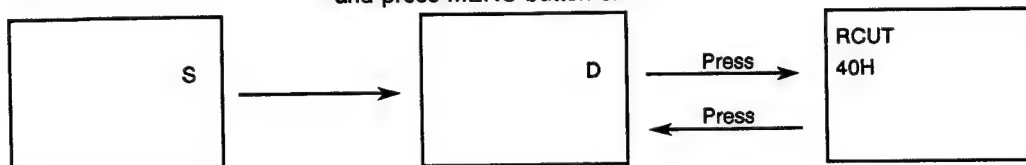


| ITEM | ADJUSTMENT PROCEDURE |
|--|---|
| INITIALIZATION OF QA02 (MEMORY) | <p>After replacing QA02, the following initialization is required.</p> <ol style="list-style-type: none"> 1. Call up the adjustment mode display following the steps 1 and 2 on page 20. 2. Press the RECALL button on Remote and CHANNEL ▲ button on TV simultaneously. The initialization of QA02 has been completed. 3. Check the picture carefully. If necessary, adjust any adjustment item. Perform "PROGRAMMING CHANNEL MEMORY" on page 9. |
| WIDTH (WID) | <ol style="list-style-type: none"> 1. Call up the adjustment mode display, then select the item WID. 2. Press the VOLUME ▲ or ▼ button to get the picture so the left and right edges of raster begins to lack. 3. Press the VOLUME ▲ or ▼ button to advance the data by 7 steps. <p>Note : Check the horizontal picture position is correct.</p> |
| VERTICAL LINEARITY (VLIN) | <ol style="list-style-type: none"> 1. Call up the adjustment mode display, then select the item VLIN. 2. Press the TV/VIDEO button on Remote until the cross-hatch pattern appears on the screen. 3. Press the VOLUME ▲ or ▼ button to obtain the picture of the best linearity <div style="text-align: right;">  </div> |
| HEIGHT (HIT) | <ol style="list-style-type: none"> 1. Call up the adjustment mode display, then select the item HIT. 2. Press the VOLUME ▲ or ▼ button to get the picture so the top of raster begins to lack. 3. Press the VOLUME ▲ button to advance the data by 9 steps. <p>Note : Check the vertical picture position is correct.</p> |
| 48PJ5UH WHITE BALANCE (RCUT) (GCUT) (BCUT) (RDRV) (BDRV) | <p>Black and White pattern</p>  <p>Bright area Adjust "RDRV" or "BDRV" to be white.</p> <p>Dark area Fine adjust "RCUT", "GCUT" or "BCUT" to be black.</p> <ol style="list-style-type: none"> 1. Set user control to reset position. (CONTRAST → Max BRIGHTNESS, COLOR, TINT → Center.) 2. Call up the adjustment mode display, then select the item RCUT. 3. Adjust the data of items RCUT, GCUT, and BCUT to "40H". 4. Press the ⌂ button on PJTV. 5. Gradually rotate R, G and B screen volume of FOCUS PAC clockwise or counterclockwise until the raster appears slightly on the CRT through the each lens, and leave them. (Lookin to the lens in order to check the raster.) 6. Press the ⌂ button on PJTV. (Return to Normal Picture) 7. Press the ⌂ button on Remote, and select the Black and White pattern. 8. Adjust the data of items RCUT, GCUT and BCUT for proper white-balanced picture in low light area. 9. Adjust the data of items RDRV and BDRV for proper white-balanced picture in high light area. 10. Check the white balance in both low and high light areas. If necessary, perform again steps from 8 to 9. |

DESIGN MODE ADJUSTMENTS

1. ENTERING TO DESIGN MODE

- 1) Select the Service mode. 2) Keep pressing CALL button on Remote and press MENU button on TV. 3) Press MENU button on TV.



When QA02 is initialized, "OPT0" and "OPT1" of DESIGN MODE ADJUSTMENTS are set to the data of 48PJ5UC/5UH which is a representative model of this chassis family. Therefore, because ON-SCREEN specification remains in the state of 48PJ5UH/UC, 48PJ5UE is required to reset the data of "OPT0".

2. SELECTING THE ADJUSTING ITEMS

Every pressing of CHANNEL ▼ button changes the adjustment items in the following order.
(▲ button for reverse order.)

| Item | Name of adjustment | Data | | | Remarks |
|------|--------------------|-------------|------------|---------|---------|
| | | Preset Data | 48PJ5UH/UC | 48PJ5UE | |
| RCUT | OPTION 1 | 00 | ← | 00 | |
| OPT1 | | | | 00 | |
| OPT0 | OPTION 0 | 02 | ← | 00 | |
| OSD | | | | 00 | |
| ⋮ | | | | | |
| RCUT | | | | | |

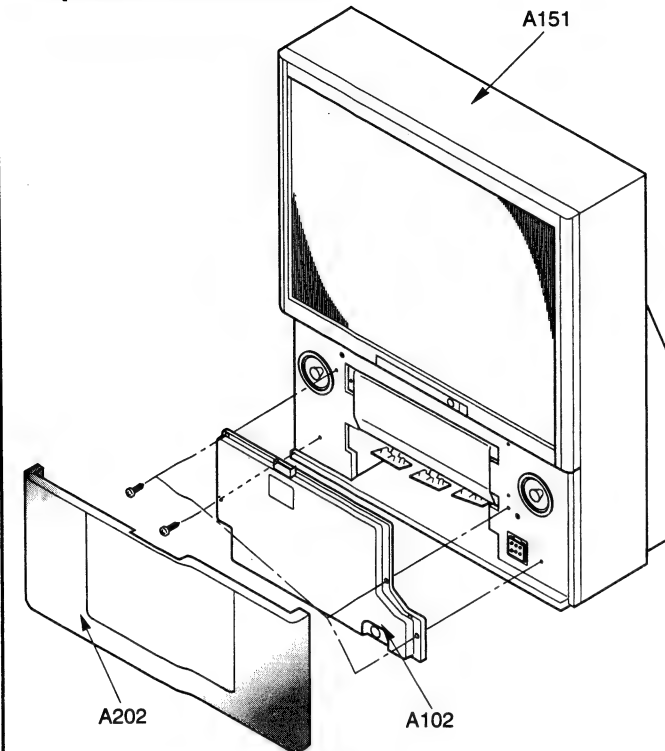
3. ADJUSTING THE DATA

Pressing of VOLUME ▲ or ▼ button will change the value of data.

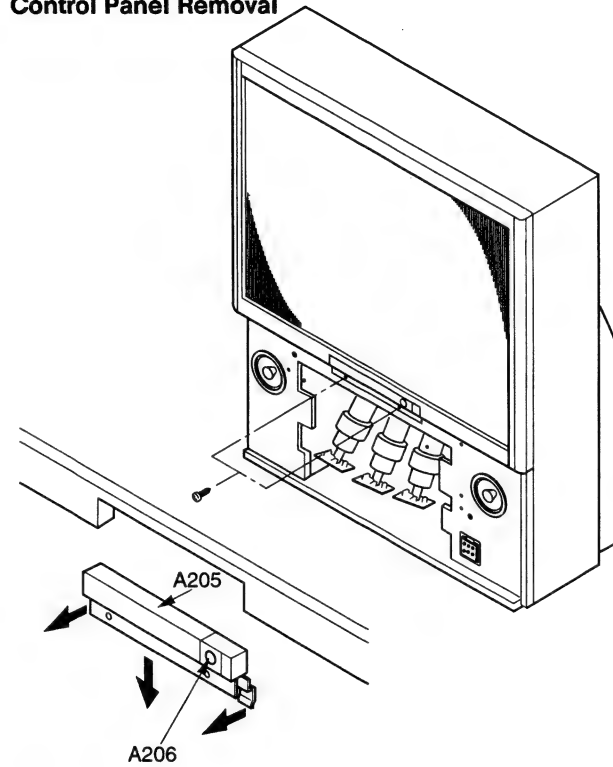
48PJ5UE/UH/UC

MECHANICAL DISASSEMBLY

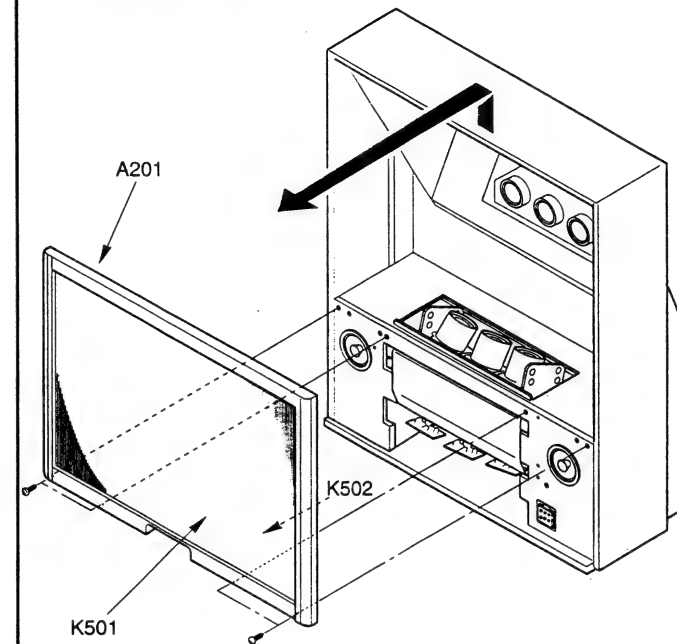
1 Speaker Grille Removal



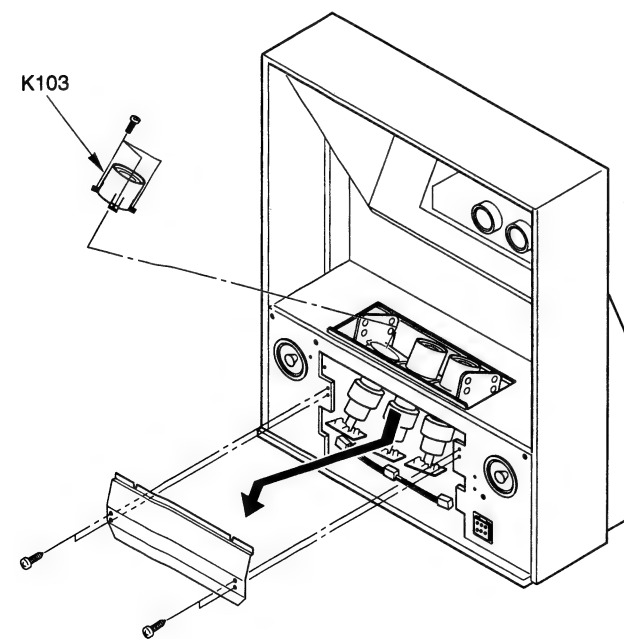
2 Control Panel Removal



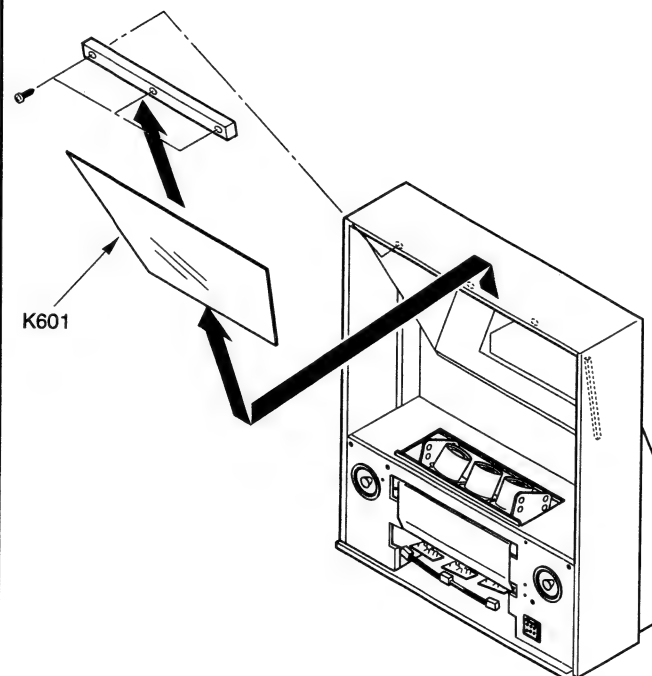
3 Front Mask Removal



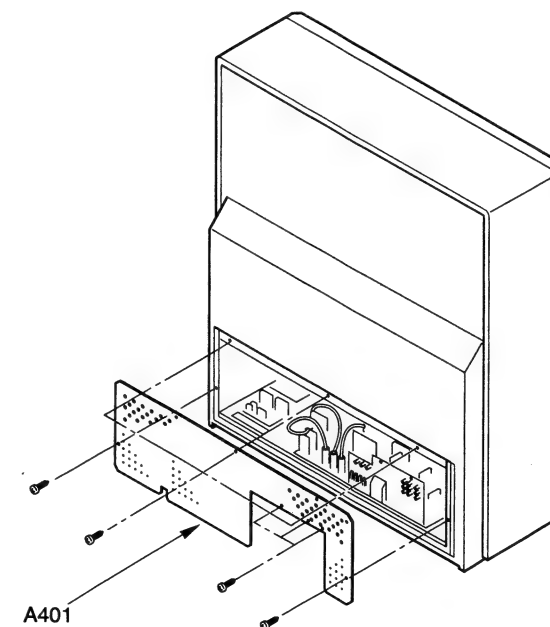
4 Shield Plate, Lens Removal



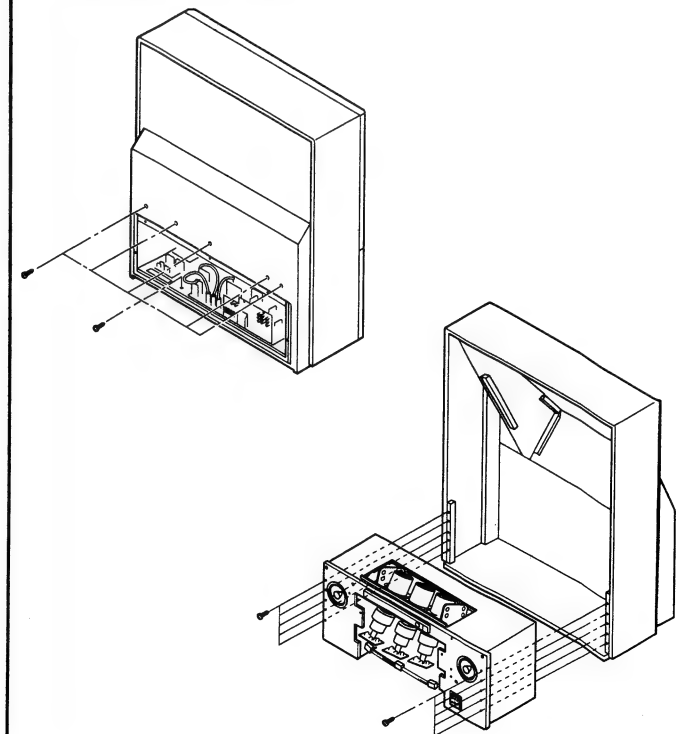
5 Mirror Removal



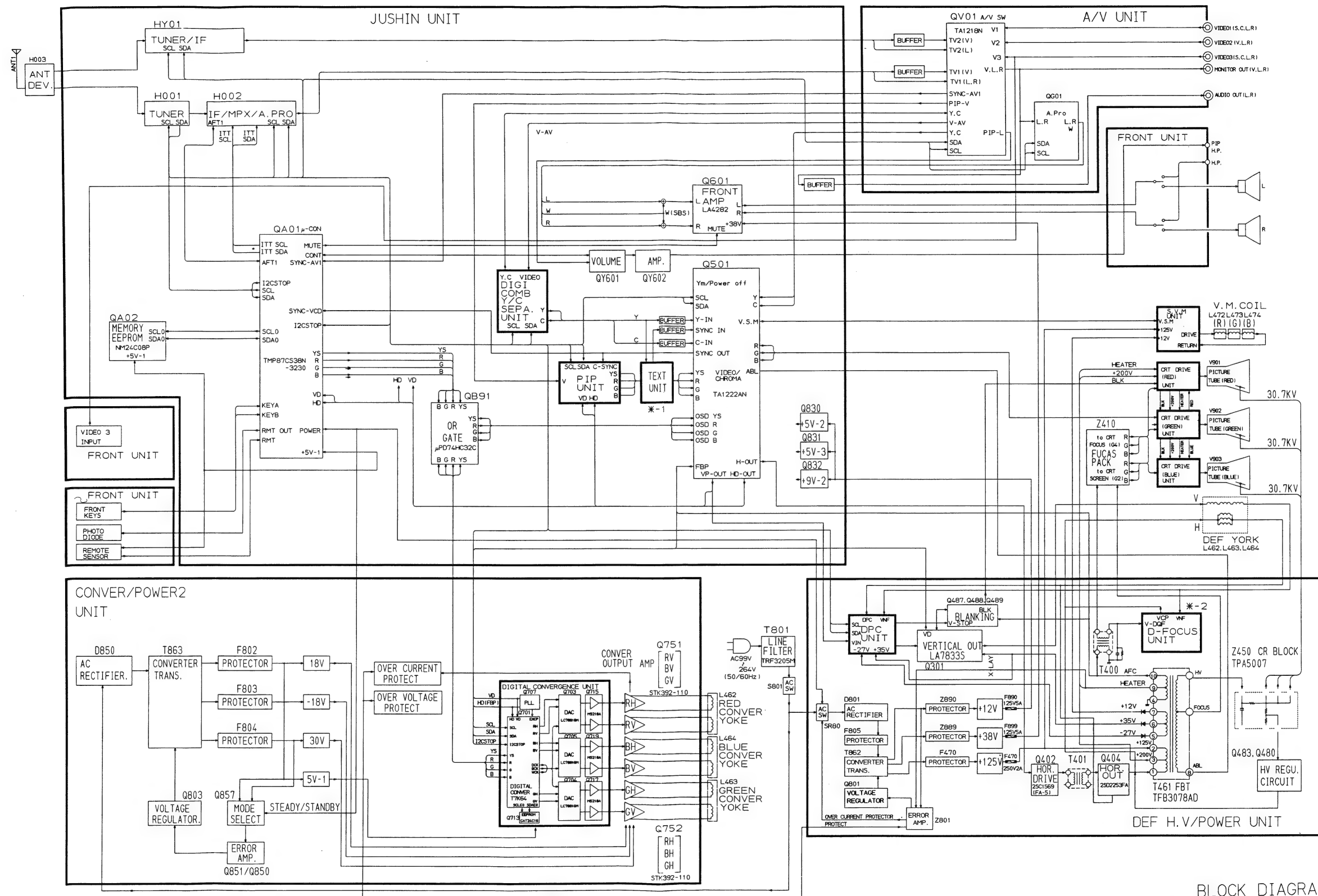
6 Back Board Removal



7 Light Box Removal



CHASSIS BLOCK DIAGRAM

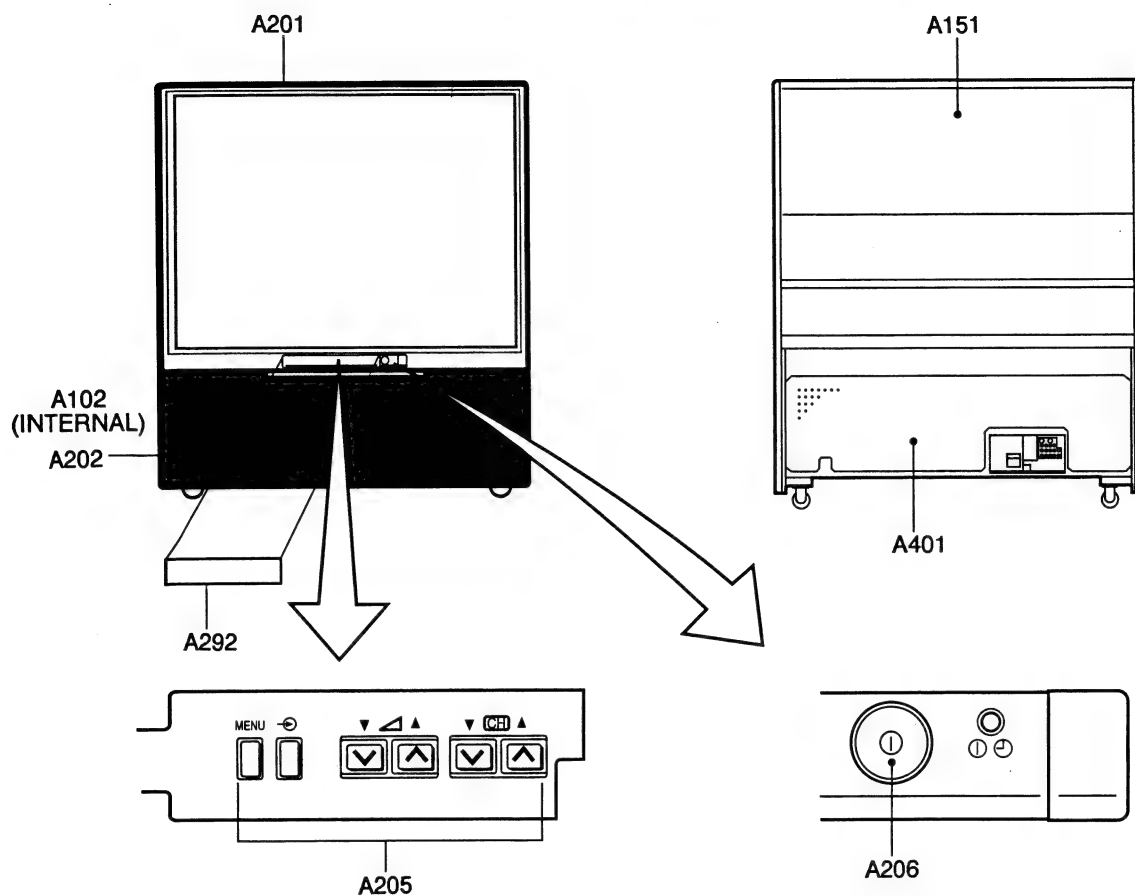


*-1 --- PJ5UE
NO --- PJ5UC, UH

*-5 --- VERTICAL DYNAMIC FOCUS --- [55PJ5UH/UC/UE
61PJ5UH/UC/UE

BLOCK DIAGRAM
MODEL
48PJ5UH/UC/UE
55PJ5UH/UC/UE
61PJ5UH/UC/UE

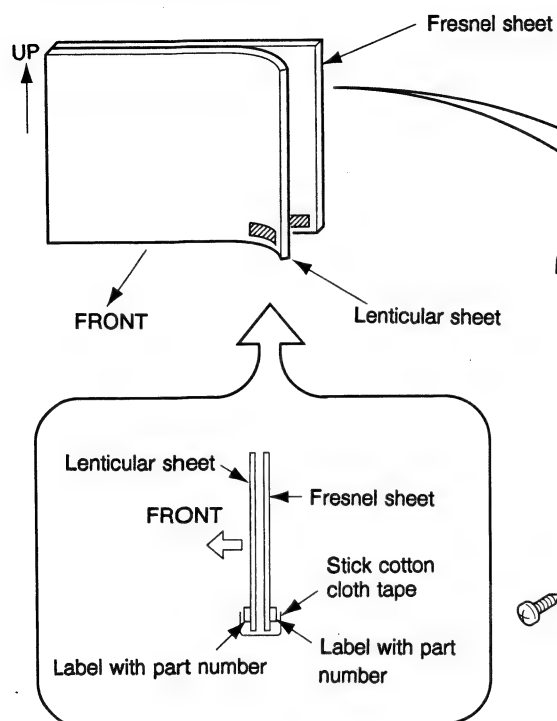
CABINET REPLACEMENT PARTS LIST



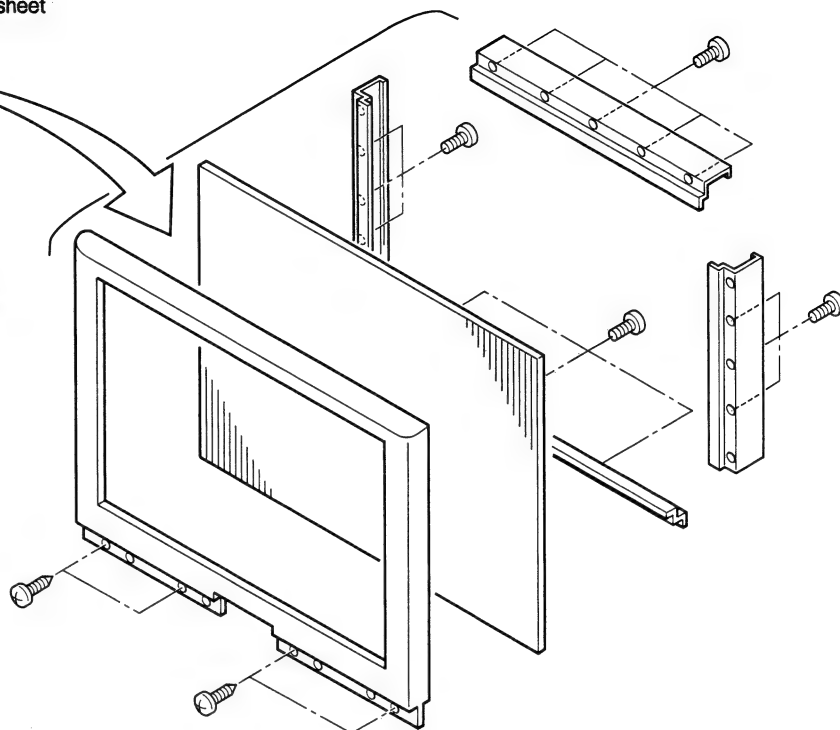
| Location No. | Part No. | Description |
|--------------|----------|---------------------------------|
| A102 | 23421707 | Cover, Front |
| A151 | 23465444 | Cabinet, Wood |
| A152 | 23935416 | Pad, Bottom |
| A163 | 23805157 | Handle |
| A201 | 23519301 | Bezel |
| A202 | 23519477 | Speaker Grille (48PJ5UE) |
| A202 | 23519422 | Speaker Grille (48PJ5UH) |
| A202 | 23519462 | Speaker Grille (48PJ5UC) |
| A205 | 23885172 | Control Panel |
| A206 | 23444834 | Knob, POWER |
| A207 | 23836498 | Spring, Coil |
| A292 | 23421722 | Door |
| △ A401 | 23822829 | Back Board |
| A505 | 72471068 | Screw, B1DT2 4x12BZ |
| A508 | 72471068 | Screw, B1DT2 4x12BZ |
| A513 | 72471068 | Screw, B1DT2 4x12BZ |
| A517 | 23035010 | Screw, PBI 4x16 |
| B202 | 23470293 | Holder, Back Terminal (48PJ5UE) |
| B202 | 23470274 | Holder, Back Terminal (48PJ5UH) |
| B202 | 23470289 | Holder, Back Terminal (48PJ5UC) |
| K103 | 23430111 | Delta, 77-A/B Assembly |
| K501 | 23837434 | Lenti Sheet SCREEN48KE-L |
| K502 | 23837435 | Fresnel Sheet, SCREEN48KE-F |
| K601 | 23430116 | MIRROR48(C) |

For location of parts in TV set, see pages 57 and 58 as well.

ASSEMBLING OF FRONT SCREEN



MOUNTING OF FRONT SCREEN



CLEANING OF LENS AND MIRROR

CAUTION : Do not hold the optical system parts (lens and mirror) with bare hand to avoid finger-prints on the surface of those parts.

HOW TO CLEAN LENS AND MIRROR

1. Be sure to remove sand dust with an air brush, etc.
2. When it is stained slightly, breathe upon it and wipe away with the specified cleaning cloth.
For other stains than the above, wipe the stains away with the specified cloth into which a cleaning liquid has been soaked.

Cleaning liquid **LENS LUSTER** (Manufactured by Edmund Scientific Co.), etc.

HOW TO CLEAN SCREEN

When cleaning the screen, use a soft cloth so as not to damage the screen.

1. Wipe the stain away with a diluted neutral detergent soaked cloth.
2. Wipe the detergent away with a water soaked cloth.
3. Wipe the screen with a dry cloth to remove moisture on the screen.

Note : Absolutely do not use alcohol, benzine, thinner, etc. for cleaning in order not to wipe away the black print on the surface.

CHASSIS REPLACEMENT PARTS LIST

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON PAGE 2 OF THIS MANUAL.

CAUTION: The international hazard symbols "△" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on page 2. Do not degrade the safety of the receiver through improper servicing.

NOTICE:

- The part number must be used when ordering parts, in order to assist in processing, be sure to include the Model number and Description.
- The PC board assembly with * mark is no longer available after the end of the production.

ABBREVIATIONS:

| | | | |
|-----------------|------------------------|-------------------------|-----------------------|
| Capacitors..... | CD : Ceramic Disk | PF : Plastic Film | EL : Electrolytic |
| Resistors..... | CF : Carbon Film | CC : Carbon Composition | MF : Metal Film |
| | OMF : Oxide Metal Film | VR : Variable Resistor | FR : Fusible Resistor |

(All CD and PF capacitors are $\pm 5\%$, 50V and all resistors, $\pm 5\%$, 1/6W unless otherwise noted.)

Models : 48PJ5UE, 48PJ5UH, 48PJ5UC

| Location No. | Part No. | Description |
|-------------------|----------|-------------------------------------|
| CAPACITORS | | |
| C101 | 24796479 | EL, 4.7 μ F, $\pm 20\%$, 35V |
| C102 | 24763221 | EL, 220 μ F, $\pm 20\%$, 16V |
| C103 | 24476103 | CD, 0.01 μ F, $\pm 30\%$, 16V |
| C104 | 24794470 | EL, 47 μ F, $\pm 20\%$, 16V |
| C105 | 24474102 | CD, 1000pF, $\pm 10\%$ |
| C106 | 24797100 | EL, 10 μ F, $\pm 20\%$, 50V |
| C107 | 24763221 | EL, 220 μ F, $\pm 20\%$, 16V |
| C111 | 24763221 | EL, 220 μ F, $\pm 20\%$, 16V |
| C112 | 24474102 | CD, 1000pF, $\pm 10\%$ |
| C113 | 24232103 | CD, 0.01 μ F, $+80\%$, -20% |
| C114 | 24763101 | EL, 100 μ F, $\pm 20\%$, 16V |
| C115 | 24232103 | CD, 0.01 μ F, $+80\%$, -20% |
| C201 | 24794100 | EL, 10 μ F, $\pm 20\%$, 16V |
| C203 | 24567104 | PF, 0.1 μ F |
| C204 | 24797010 | EL, 1 μ F, $\pm 20\%$, 50V |
| C205 | 24206229 | EL, 2.2 μ F, 50V |
| C206 | 24794100 | EL, 10 μ F, $\pm 20\%$, 16V |
| C207 | 24436390 | CD, 39pF |
| C208 | 24436390 | CD, 39pF |
| C209 | 24436390 | CD, 39pF |
| C212 | 24794100 | EL, 10 μ F, $\pm 20\%$, 16V |
| C213 | 24591334 | PF, 0.33 μ F |
| C303 | 24214471 | CD, 470pF, $\pm 10\%$, 500V |
| C305 | 24617912 | EL, 2.2 μ F, $\pm 10\%$, 50V |
| C306 | 24630798 | EL, 3300 μ F, $\pm 10\%$, 25kV |
| C307 | 24693473 | PF, 0.047 μ F, 100V |
| C308 | 24668221 | EL, 220 μ F, $\pm 20\%$, 35V |
| C309 | 24212101 | CD, 100pF, $\pm 10\%$ |
| C310 | 24797222 | EL, 2200 μ F, $\pm 20\%$, 50V |
| C311 | 24214561 | CD, 560pF, $\pm 10\%$, 500V |
| C313 | 24082057 | PF, 0.22 μ F, 100V |
| C314 | 24591563 | PF, 0.056 μ F |
| C315 | 24591103 | PF, 0.01 μ F |
| C315 | 24797229 | EL, 2.2 μ F, $\pm 20\%$, 50V |
| C318 | 24666471 | EL, 470 μ F, $\pm 20\%$, 16V |
| C319 | 24591102 | PF, 1000pF |
| C320 | 24797101 | EL, 100 μ F, $\pm 20\%$, 50V |
| C321 | 24591203 | PF, 0.02 μ F |
| C322 | 24617912 | EL, 2.2 μ F, $\pm 10\%$, 50V |
| C323 | 24591224 | PF, 0.22 μ F |

| Location No. | Part No. | Description |
|--------------|----------|-------------------------------------|
| C326 | 24591683 | PF, 0.068 μ F |
| C338 | 24666101 | EL, 100 μ F, $\pm 20\%$, 16V |
| C340 | 24666100 | EL, 10 μ F, $\pm 20\%$, 16V |
| C343 | 24591103 | PF, 0.01 μ F |
| C350 | 24591104 | PF, 0.1 μ F |
| C351 | 24666222 | EL, 2200 μ F, $\pm 20\%$, 16V |
| C370 | 24794101 | EL, 100 μ F, $\pm 20\%$, 16V |
| C371 | 24796100 | EL, 10 μ F, $\pm 20\%$, 35V |
| C401 | 24567104 | PF, 0.1 μ F |
| C403 | 24591203 | PF, 0.02 μ F |
| C404 | 24797229 | EL, 2.2 μ F, $\pm 20\%$, 50V |
| C413 | 24214821 | CD, 820pF, $\pm 10\%$, 500V |
| C415 | 24591392 | PF, 3900pF |
| C416 | 24678100 | EL, 10 μ F, $\pm 20\%$, 200V |
| C417 | 24214391 | CD, 390pF, $\pm 10\%$, 500V |
| C418 | 24095883 | PF, 0.015 μ F, $\pm 3\%$, 630V |
| C419 | 24095803 | PF, 0.062 μ F, 400V |
| C420 | 24666101 | EL, 100 μ F, $\pm 20\%$, 16V |
| C423 | 24095779 | PF, 0.62 μ F, 400V |
| C430 | 24232103 | CD, 0.01 μ F, $+80\%$, -20% |
| C431 | 24794101 | EL, 100 μ F, $\pm 20\%$, 16V |
| △C440 | 24082323 | PF, 1000pF, $\pm 3\%$, 1500V |
| △C441 | 24095787 | PF, 0.3 μ F, 400V |
| △C443 | 24082290 | PF, 6800pF, $\pm 3\%$, 1800V |
| △C444 | 24082287 | PF, 5100pF, $\pm 3\%$, 1800V |
| C446 | 24679330 | EL, 33 μ F, $\pm 20\%$, 250V |
| C447 | 24795102 | EL, 1000 μ F, $\pm 20\%$, 25V |
| C448 | 24640908 | EL, 33 μ F, $\pm 20\%$, 160V |
| C458 | 24667100 | EL, 10 μ F, $\pm 20\%$, 25V |
| C459 | 24669478 | EL, 0.47 μ F, $\pm 20\%$, 50V |
| C460 | 24796331 | EL, 330 μ F, $\pm 20\%$, 35V |
| C463 | 24212152 | CD, 1500pF, $\pm 10\%$ |
| C464 | 24640872 | EL, 10 μ F, $\pm 20\%$, 100V |
| C465 | 24591332 | PF, 3300pF |
| C467 | 24095881 | PF, 0.018 μ F, $\pm 3\%$, 630V |
| C470 | 24794220 | EL, 22 μ F, $\pm 20\%$, 16V |
| C471 | 24206479 | EL, 4.7 μ F, 50V |
| C472 | 24567474 | PF, 0.47 μ F |
| C473 | 24567474 | PF, 0.47 μ F |
| C475 | 24095887 | PF, 0.01 μ F, $\pm 3\%$, 630V |
| C481 | 24567104 | PF, 0.1 μ F |

| Location No. | Part No. | Description |
|--------------|----------|------------------------------|
| C482 | 24591152 | PF, 1500pF |
| C483 | 24567224 | PF, 0.22μF |
| C485 | 24766101 | EL, 100μF, ±20%, 50V |
| C493 | 24591124 | PF, 0.12μF |
| C501 | 24232103 | CD, 0.01μF, +80%, -20% |
| C502 | 24232103 | CD, 0.01μF, +80%, -20% |
| C503 | 24763101 | EL, 100μF, ±20%, 16V |
| C504 | 24591222 | PF, 2200pF |
| C505 | 24353120 | CD, 12pF |
| C507 | 24353130 | CD, 13pF |
| C508 | 24794100 | EL, 10μF, ±20%, 16V |
| C509 | 24763101 | EL, 100μF, ±20%, 16V |
| C510 | 24763101 | EL, 100μF, ±20%, 16V |
| C511 | 24232103 | CD, 0.01μF, +80%, -20% |
| C512 | 24206228 | EL, 0.22μF, 50V |
| C513 | 24232103 | CD, 0.01μF, +80%, -20% |
| C514 | 24567104 | PF, 0.1μF |
| C515 | 24567104 | PF, 0.1μF |
| C517 | 24472010 | CD, 1pF, ±20% |
| C520 | 24436561 | CD, 560pF |
| C521 | 24353181 | CD, 180pF |
| C601 | 24591102 | PF, 1000pF |
| C602 | 24591102 | PF, 1000pF |
| C603 | 24797100 | EL, 10μF, ±20%, 50V |
| C604 | 24797100 | EL, 10μF, ±20%, 50V |
| C605 | 24795101 | EL, 100μF, ±20%, 25V |
| C606 | 24795101 | EL, 100μF, ±20%, 25V |
| C607 | 24591104 | PF, 0.1μF |
| C608 | 24591104 | PF, 0.1μF |
| C609 | 24669102 | EL, 1000μF, ±20%, 50V |
| C610 | 24669102 | EL, 1000μF, ±20%, 50V |
| C611 | 24795221 | EL, 220μF, ±20%, 25V |
| C612 | 24794221 | EL, 220μF, ±20%, 16V |
| C613 | 24797478 | EL, 0.47μF, ±20%, 50V |
| C614 | 24797478 | EL, 0.47μF, ±20%, 50V |
| C664 | 24797479 | EL, 4.7μF, ±20%, 50V |
| C680 | 24669471 | EL, 470μF, ±20%, 50V |
| C681 | 24591104 | PF, 0.1μF |
| C701 | 24781330 | Chip, 33pF, SL |
| C702 | 24781330 | Chip, 33pF, SL |
| C711 | 24206100 | EL, 10μF, ±20%, 50V |
| C714 | 24092293 | Chip, 0.1μF, +80%, -20%, 25V |
| C715 | 24092441 | Chip, 1μF, +80%, -20%, 16V |
| C716 | 24815822 | Chip, 8200pF, ±10% |
| C717 | 24774470 | Chip, 47pF, CH |
| C718 | 24774470 | Chip, 47pF, CH |
| C719 | 24794101 | EL, 100μF, ±20%, 16V |
| C720 | 24092293 | Chip, 0.1μF, +80%, -20%, 25V |
| C721 | 24590104 | PF, 0.1μF |
| C722 | 24092293 | Chip, 0.1μF, +80%, -20%, 25V |
| C724 | 24092293 | Chip, 0.1μF, +80%, -20%, 25V |
| C725 | 24092293 | Chip, 0.1μF, +80%, -20%, 25V |
| C726 | 24092293 | Chip, 0.1μF, +80%, -20%, 25V |
| C727 | 24092293 | Chip, 0.1μF, +80%, -20%, 25V |
| C728 | 24763221 | EL, 220μF, ±20%, 16V |
| C729 | 24092293 | Chip, 0.1μF, +80%, -20%, 25V |
| C730 | 24590104 | PF, 0.1μF |
| C731 | 24766010 | EL, 1.0μF, ±20%, 50V |
| C732 | 24590822 | PF, 8200pF |
| C735 | 24092293 | Chip, 0.1μF, +80%, -20%, 25V |
| C736 | 24794470 | EL, 47μF, ±20%, 16V |
| C739 | 24092293 | Chip, 0.1μF, +80%, -20%, 25V |
| C740 | 24092293 | Chip, 0.1μF, +80%, -20%, 25V |
| C741 | 24794470 | EL, 47μF, ±20%, 16V |

| Location No. | Part No. | Description |
|--------------|----------|------------------------------|
| C742 | 24794470 | EL, 47μF, ±20%, 16V |
| C743 | 24092293 | Chip, 0.1μF, +80%, -20%, 25V |
| C744 | 24092293 | Chip, 0.1μF, +80%, -20%, 25V |
| C745 | 24794470 | EL, 47μF, ±20%, 16V |
| C746 | 24794470 | EL, 47μF, ±20%, 16V |
| C747 | 24092293 | Chip, 0.1μF, +80%, -20%, 25V |
| C748 | 24092293 | Chip, 0.1μF, +80%, -20%, 25V |
| C749 | 24794470 | EL, 47μF, ±20%, 16V |
| C750 | 24794470 | EL, 47μF, ±20%, 16V |
| C756 | 24781330 | Chip, 33pF, SL |
| C761 | 24590182 | PF, 1800pF |
| C762 | 24590562 | PF, 5600pF |
| C763 | 24774391 | Chip, 390pF |
| C765 | 24590182 | PF, 1800pF |
| C766 | 24590562 | PF, 5600pF |
| C767 | 24774391 | Chip, 390pF |
| C769 | 24590182 | PF, 1800pF |
| C770 | 24590562 | PF, 5600pF |
| C771 | 24774391 | Chip, 390pF |
| C773 | 24590182 | PF, 1800pF |
| C774 | 24590562 | PF, 5600pF |
| C775 | 24774391 | Chip, 390pF |
| C777 | 24590182 | PF, 1800pF |
| C778 | 24590562 | PF, 5600pF |
| C779 | 24774391 | Chip, 390pF |
| C781 | 24590182 | PF, 1800pF |
| C782 | 24590562 | PF, 5600pF |
| C783 | 24774391 | Chip, 390pF |
| C795 | 24761221 | EL, 220μF, ±20%, 6.3V |
| C798 | 24763101 | EL, 100μF, ±20%, 16V |
| C799 | 24763101 | EL, 100μF, ±20%, 16V |
| △C801 | 24082374 | PF, 0.22μF, AC250V |
| △C802 | 24082318 | PF, 0.1μF, ±20%, AC250V |
| △C803 | 24082194 | PF, 0.22μF, ±20%, AC250V |
| △C804 | 24082374 | PF, 0.22μF, AC250V |
| C805 | 24092281 | CD, 4700pF, ±20%, AC250V |
| C806 | 24092281 | CD, 4700pF, ±20%, AC250V |
| C808 | 24669221 | EL, 220μF, ±20%, 50V |
| C809 | 24214471 | CD, 470pF, ±10%, 500V |
| C810 | 24086043 | EL, 820μF, ±20%, 450V |
| △C811(U028) | 24094655 | CD, 1000pF, ±20%, AC400V |
| △C811(U401) | 24094654 | CD, 470pF, ±20%, AC400V |
| △C812 | 24094654 | CD, 470pF, ±20%, AC400V |
| C816 | 24667221 | EL, 220μF, ±20%, 25V |
| C817 | 24092341 | CD, 470pF, ±10%, 2kV |
| C818 | 24095931 | PF, 2200pF, 1250V |
| △C819 | 24094654 | CD, 470pF, ±20%, AC400V |
| C820 | 24092343 | CD, 680pF, ±10%, 2kV |
| △C821 | 24082374 | PF, 0.22μF, ±20%, AC250V |
| △C824 | 24082374 | PF, 0.22μF, ±20%, AC250V |
| C829 | 24590152 | PF, 1500pF |
| C832 | 24539474 | PF, 0.47μF |
| C833(U901) | 24539474 | PF, 0.47μF |
| C833(U401) | 24669479 | EL, 4.7μF, ±20%, 50V |
| C834 | 24539334 | PF, 0.33μF |
| C835 | 24203470 | EL, 47μF, ±20%, 16V |
| C836 | 24232103 | CD, 0.01μF, +80%, -20% |
| C837 | 24567334 | PF, 0.33μF |
| C838 | 24763221 | EL, 220μF, ±20%, 16V |
| C840 | 24214471 | CD, 470pF, ±10%, 500V |
| C841 | 24676220 | EL, 22μF, ±20%, 100V |
| C842 | 24538474 | PF, 0.47μF |
| C843 | 24538474 | PF, 0.47μF |
| C844 | 24567334 | PF, 0.33μF |

| Location No. | Part No. | Description |
|--------------|----------|----------------------------------|
| C845 | 24665471 | EL, 470 μ F, \pm 20%, 10V |
| C846 | 24567104 | PF, 0.1 μ F |
| C847 | 24669470 | EL, 47 μ F, \pm 20%, 50V |
| C849 | 24214331 | CD, 330pF, \pm 10%, 500V |
| C850 | 24092281 | CD, 4700pF, \pm 20%, AC250V |
| C851 | 24092281 | CD, 4700pF, \pm 20%, AC250V |
| C852 | 24092281 | CD, 4700pF, \pm 20%, AC250V |
| C853 | 24092281 | CD, 4700pF, \pm 20%, AC250V |
| C854 | 24086936 | EL, 270 μ F, \pm 20%, 450V |
| C855 | 24092341 | CD, 470pF, \pm 10%, 2kV |
| C856 | 24095913 | PF, 1500pF, \pm 3%, 1600V |
| C857 | 24797470 | EL, 47 μ F, \pm 20%, 50V |
| C858 | 24214471 | CD, 470pF, \pm 10%, 500V |
| C859 | 24214471 | CD, 470pF, \pm 10%, 500V |
| C860 | 24676470 | EL, 47 μ F, \pm 20%, 100V |
| C861 | 24676220 | EL, 22 μ F, \pm 20%, 100V |
| C862 | 24590152 | PF, 1500pF |
| △ C863 | 24094654 | CD, 470pF, \pm 20%, AC400V |
| △ C864 | 24094654 | CD, 470pF, \pm 20%, AC400V |
| C865 | 24214331 | CD, 330pF, \pm 10%, 500V |
| C866 | 24214331 | CD, 330pF, \pm 10%, 500V |
| C867 | 24214471 | CD, 470pF, \pm 10%, 500V |
| C868 | 24214471 | CD, 470pF, \pm 10%, 500V |
| C869 | 24669470 | EL, 47 μ F, \pm 20%, 50V |
| C870 | 24795332 | EL, 3300 μ F, 25V |
| C871 | 24795332 | EL, 3300 μ F, 25V |
| C872 | 24214471 | CD, 470pF, \pm 10%, 500V |
| C873 | 24797222 | EL, 2200 μ F, \pm 20%, 50V |
| C874 | 24214471 | CD, 470pF, \pm 10%, 500V |
| C875 | 24567563 | PF, 0.056 μ F |
| C876 | 24797100 | EL, 10 μ F, \pm 20%, 50V |
| C877 | 24797100 | EL, 10 μ F, \pm 20%, 50V |
| C878 | 24567104 | PF, 0.1 μ F |
| C879 | 24797100 | EL, 10 μ F, \pm 20%, 50V |
| C880 | 24677220 | EL, 22 μ F, \pm 20%, 160V |
| C884 | 24086049 | EL, 330 μ F, \pm 20%, 160V |
| C885 | 24214471 | CD, 470pF, \pm 10%, 500V |
| C887 | 24214471 | CD, 470pF, \pm 10%, 500V |
| C889 | 24797222 | EL, 2200 μ F, \pm 20%, 50V |
| C890 | 24666101 | EL, 100 μ F, \pm 20%, 16V |
| C891 | 24666101 | EL, 100 μ F, \pm 20%, 16V |
| C892 | 24795472 | EL, 4700 μ F, \pm 20%, 25V |
| C893 | 24092338 | CD, 270pF, \pm 10%, 2kV |
| C894 | 24669229 | EL, 2.2 μ F, \pm 20%, 50V |
| C895 | 24676470 | EL, 47 μ F, \pm 20%, 100V |
| C897 | 24795472 | EL, 4700 μ F, \pm 20%, 25V |
| C898 | 24567474 | PF, 0.47 μ F |
| C899 | 24214471 | CD, 470pF, \pm 10%, 500V |
| C901 | 24211102 | CD, 1000pF, \pm 10%, 2kV |
| C902 | 24794101 | EL, 100 μ F, \pm 20%, 16V |
| C903 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| C904 | 24436471 | CD, 470pF |
| C905 | 24214102 | CD, 1000pF, \pm 10%, 500V |
| C911 | 24211102 | CD, 1000pF, \pm 10%, 2kV |
| C912 | 24794101 | EL, 100 μ F, \pm 20%, 16V |
| C913 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| C914 | 24436471 | CD, 470pF |
| C915 | 24679330 | EL, 33 μ F, \pm 20%, 250V |
| C916 | 24794102 | EL, 1000 μ F, \pm 20%, 16V |
| C921 | 24211102 | CD, 1000pF, \pm 10%, 2kV |
| C922 | 24794101 | EL, 100 μ F, \pm 20%, 16V |
| C923 | 24436471 | CD, 470pF |
| C924 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| C941 | 24797478 | EL, 0.47 μ F, \pm 20%, 50V |

| Location No. | Part No. | Description |
|--------------|----------|----------------------------------|
| C942 | 24203100 | EL, 10 μ F, \pm 20%, 16V |
| C943 | 24794471 | EL, 470 μ F, \pm 20%, 16V |
| C944 | 24203100 | EL, 10 μ F, \pm 20%, 16V |
| C961 | 24794101 | EL, 100 μ F, \pm 20%, 16V |
| C962 | 24203100 | EL, 10 μ F, \pm 20%, 16V |
| C963 | 24591104 | PF, 0.1 μ F |
| C964 | 24591104 | PF, 0.1 μ F |
| C7701 | 24761221 | EL, 220 μ F, \pm 20%, 6.3V |
| C7721 | 24212102 | CD, 1000pF, \pm 10% |
| C7722 | 24436101 | CD, 100pF |
| C7724 | 24795101 | EL, 100 μ F, \pm 20%, 25V |
| C7725 | 24795101 | EL, 100 μ F, \pm 20%, 25V |
| C7726 | 24212102 | CD, 1000pF, \pm 10% |
| C7727 | 24436101 | CD, 100pF |
| C7729 | 24212102 | CD, 1000pF, \pm 10% |
| C7730 | 24436101 | CD, 100pF |
| C7732 | 24212102 | CD, 1000pF, \pm 10% |
| C7733 | 24436101 | CD, 100pF |
| C7735 | 24795101 | EL, 100 μ F, \pm 20%, 25V |
| C7736 | 24797101 | EL, 100 μ F, \pm 20%, 50V |
| C7737 | 24212102 | CD, 1000pF, \pm 10% |
| C7738 | 24436101 | CD, 100pF |
| C7740 | 24212102 | CD, 1000pF, \pm 10% |
| C7741 | 24436101 | CD, 100pF |
| C7747 | 24794101 | EL, 100 μ F, \pm 20%, 16V |
| C7748 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| C7749 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| C7750 | 24764101 | EL, 100 μ F, \pm 20%, 25V |
| C7751 | 24794101 | EL, 100 μ F, \pm 20%, 16V |
| C7752 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| C7753 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| C7754 | 24764101 | EL, 100 μ F, \pm 20%, 25V |
| C7755 | 24794101 | EL, 100 μ F, \pm 20%, 16V |
| C7756 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| C7757 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| C7758 | 24764101 | EL, 100 μ F, \pm 20%, 25V |
| C7760 | 24797478 | EL, 0.47 μ F, \pm 20%, 50V |
| C7761 | 24795470 | EL, 47 μ F, \pm 20%, 25V |
| C7762 | 24794470 | EL, 47 μ F, \pm 20%, 16V |
| C7763 | 24797478 | EL, 0.47 μ F, \pm 20%, 50V |
| C7764 | 24436331 | CD, 330pF |
| C7765 | 24797479 | EL, 4.7 μ F, \pm 20%, 50V |
| C7766 | 24797479 | EL, 4.7 μ F, \pm 20%, 50V |
| C7767 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| C7768 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| C7769 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| C7770 | 24797478 | EL, 0.47 μ F, \pm 20%, 50V |
| C7771 | 24567103 | PF, 0.01 μ F |
| C7772 | 24567224 | PF, 0.22 μ F |
| C7774 | 24436331 | CD, 330pF |
| CA13 | 24474101 | CD, 100pF, \pm 10% |
| CA22 | 24474101 | CD, 100pF, \pm 10% |
| CA23 | 24474101 | CD, 100pF, \pm 10% |
| CA24 | 24474101 | CD, 100pF, \pm 10% |
| CA25 | 24474101 | CD, 100pF, \pm 10% |
| CA33 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CA36 | 24474101 | CD, 100pF, \pm 10% |
| CA37 | 24474101 | CD, 100pF, \pm 10% |
| CA38 | 24474101 | CD, 100pF, \pm 10% |
| CA42 | 24794100 | EL, 10 μ F, \pm 20%, 16V |
| CA43 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CA44 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CA68 | 24794100 | EL, 10 μ F, \pm 20%, 16V |
| CA69 | 24232103 | CD, 0.01 μ F, +80%, -20% |

| Location No. | Part No. | Description |
|--------------|----------|----------------------------------|
| CB01 | 24794470 | EL, 47 μ F, \pm 20%, 16V |
| CB61 | 24797010 | EL, 1 μ F, \pm 20%, 50V |
| CB62 | 24591683 | PF, 0.068 μ F |
| CB63 | 24591333 | PF, 0.033 μ F |
| CD80 | 24203100 | EL, 10 μ F, \pm 20%, 16V |
| CG01 | 24591224 | PF, 0.22 μ F |
| CG02 | 24591104 | PF, 0.1 μ F |
| CG03 | 24591104 | PF, 0.1 μ F |
| CG04 | 24206010 | EL, 1 μ F, 50V |
| CG05 | 24797220 | EL, 22 μ F, \pm 20%, 50V |
| CG07 | 24206010 | EL, 1 μ F, 50V |
| CG08 | 24206010 | EL, 1 μ F, 50V |
| CG09 | 24206010 | EL, 1 μ F, 50V |
| CG12 | 24591273 | PF, 0.027 μ F |
| CG13 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CG14 | 24203101 | EL, 100 μ F, \pm 20%, 16V |
| CG15 | 24591822 | PF, 8200pF |
| CG16 | 24206010 | EL, 1 μ F, 50V |
| CG17 | 24591273 | PF, 0.027 μ F |
| CG18 | 24591822 | PF, 8200pF |
| CG20 | 24203100 | EL, 10 μ F, \pm 20%, 16V |
| CG24 | 24474102 | CD, 1000pF, \pm 10% |
| CG25 | 24206229 | EL, 2.2 μ F, 50V |
| CG26 | 24206229 | EL, 2.2 μ F, 50V |
| CG30 | 24203100 | EL, 10 μ F, \pm 20%, 16V |
| CQ01 | 24212102 | CD, 1000pF, \pm 10% |
| CQ02 | 24353820 | CD, 82pF |
| CQ03 | 24212102 | CD, 1000pF, \pm 10% |
| CQ04 | 24794100 | EL, 10 μ F, \pm 20%, 16V |
| CQ05 | 24590563 | PF, 0.056 μ F |
| CQ07 | 24590203 | PF, 0.02 μ F |
| CQ08 | 24590683 | PF, 0.068 μ F |
| CQ09 | 24797229 | EL, 2.2 μ F, \pm 20%, 50V |
| CQ10 | 24590223 | PF, 0.002 μ F |
| CQ11 | 24797229 | EL, 2.2 μ F, \pm 20%, 50V |
| CQ12 | 24436910 | CD, 91pF |
| CQ13 | 24797010 | EL, 1 μ F, \pm 20%, 50V |
| CQ14 | 24797010 | EL, 1 μ F, \pm 20%, 50V |
| CQ15 | 24794101 | EL, 100 μ F, \pm 20%, 16V |
| CQ16 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CQ17 | 24353150 | CD, 15pF |
| CQ18 | 24436910 | CD, 91pF |
| CQ19 | 24590103 | PF, 0.01 μ F |
| CQ20 | 24567104 | PF, 0.1 μ F |
| CQ21 | 24794470 | EL, 47 μ F, \pm 20%, 16V |
| CQ22 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CQ23 | 24567104 | PF, 0.1 μ F |
| CQ24 | 24567104 | PF, 0.1 μ F |
| CQ25 | 24797100 | EL, 10 μ F, \pm 20%, 50V |
| CQ26 | 24567104 | PF, 0.1 μ F |
| CQ27 | 24567104 | PF, 0.1 μ F |
| CQ28 | 24797478 | EL, 0.47 μ F, \pm 20%, 50V |
| CQ29 | 24794101 | EL, 100 μ F, \pm 20%, 16V |
| CQ30 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CQ31 | 24797478 | EL, 0.47 μ F, \pm 20%, 50V |
| CQ32 | 24590103 | PF, 0.01 μ F |
| CQ33 | 24567104 | PF, 0.1 μ F |
| CQ34 | 24567104 | PF, 0.1 μ F |
| CQ35 | 24206478 | EL, 0.47 μ F, 50V |
| CQ36 | 24206478 | EL, 0.47 μ F, 50V |
| CQ37 | 24797010 | EL, 1 μ F, \pm 20%, 50V |
| CQ38 | 24797010 | EL, 1 μ F, \pm 20%, 50V |
| CQ39 | 24797010 | EL, 1 μ F, \pm 20%, 50V |
| CQ40 | 24436910 | CD, 91pF |

| Location No. | Part No. | Description |
|--------------|----------|--|
| CR01 | 24567104 | PF, 0.1 μ F |
| CR02 | 24567104 | PF, 0.1 μ F |
| CR03 | 24567104 | PF, 0.1 μ F |
| CR05 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CR06 | 24666100 | EL, 10 μ F, \pm 20%, 16V |
| CR12(U901) | 24206108 | EL, 0.1 μ F, 50V |
| CR12(UM01) | 24666100 | EL, 10 μ F, \pm 20%, 16V |
| CR13 | 24206108 | EL, 0.1 μ F, 50V |
| CR14 | 24206108 | EL, 0.1 μ F, 50V |
| CR15 | 24762471 | EL, 470 μ F, \pm 20%, 10V |
| CS01 | 24206010 | EL, 1 μ F, 50V |
| CS02 | 24206010 | EL, 1 μ F, 50V |
| CS03 | 24206010 | EL, 1 μ F, 50V |
| CS05 | 24206010 | EL, 1 μ F, 50V |
| CS06 | 24206010 | EL, 1 μ F, 50V |
| CS07 | 24206010 | EL, 1 μ F, 50V |
| CS08 | 24206010 | EL, 1 μ F, 50V |
| CS09 | 24206010 | EL, 1 μ F, 50V |
| CS10 | 24206010 | EL, 1 μ F, 50V |
| CS11 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CS21 | 24212152 | CD, 1500pF, \pm 10% |
| CS22 | 24212152 | CD, 1500pF, \pm 10% |
| CS23 | 24206478 | EL, 0.47 μ F, 50V |
| CS32 | 24203100 | EL, 10 μ F, \pm 20%, 16V |
| CS33 | 24763101 | EL, 100 μ F, \pm 20%, 16V |
| CS180 | 24203100 | EL, 10 μ F, \pm 20%, 16V |
| CS182 | 24203100 | EL, 10 μ F, \pm 20%, 16V |
| CS601 | 24794100 | EL, 10 μ F, \pm 20%, 16V |
| CS602 | 24794100 | EL, 10 μ F, \pm 20%, 16V |
| CS605 | 24797478 | EL, 0.47 μ F, \pm 20%, 50V |
| CT01 | 24590104 | PF, 0.1 μ F |
| CT02 | 24353080 | CD, 8pF, \pm 0.25pF |
| CT03 | 24353150 | CD, 15pF |
| CT04 | 24212102 | CD, 1000pF, \pm 10% |
| CT05 | 24590104 | PF, 0.1 μ F |
| CT06 | 24590104 | PF, 0.1 μ F |
| CT07 | 24085944 | EL, 2.2 μ F, \pm 20%, 50V, Non-Polar |
| CT08 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CT09 | 24794101 | EL, 100 μ F, \pm 20%, 16V |
| CT10 | 24436220 | CD, 22pF |
| CT11 | 24794101 | EL, 100 μ F, \pm 20%, 16V |
| CT12 | 24590104 | PF, 0.1 μ F |
| CT13 | 24794100 | EL, 10 μ F, \pm 20%, 16V |
| CT14 | 24794100 | EL, 10 μ F, \pm 20%, 16V |
| CT16 | 24436220 | CD, 22pF |
| CT17 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CV01 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CV02 | 24203100 | EL, 10 μ F, \pm 20%, 16V |
| CV03 | 24203100 | EL, 10 μ F, \pm 20%, 16V |
| CV04 | 24203100 | EL, 10 μ F, \pm 20%, 16V |
| CV05 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CV06 | 24203100 | EL, 10 μ F, \pm 20%, 16V |
| CV07 | 24763471 | EL, 470 μ F, \pm 20%, 16V |
| CV08 | 24763471 | EL, 470 μ F, \pm 20%, 16V |
| CV09 | 24203100 | EL, 10 μ F, \pm 20%, 16V |
| CV10 | 24203100 | EL, 10 μ F, \pm 20%, 16V |
| CV12 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CV13 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CV27 | 24763471 | EL, 470 μ F, \pm 20%, 16V |
| CV29 | 24763101 | EL, 100 μ F, \pm 20%, 16V |
| CV30 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CV31 | 24474102 | CD, 1000pF, \pm 10% |
| CV32 | 24232103 | CD, 0.01 μ F, +80%, -20% |

| Location No. | Part No. | Description |
|--------------|----------|----------------------------------|
| CV40 | 24763101 | EL, 100 μ F, \pm 20%, 16V |
| CV41 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CV42 | 24203330 | EL, 33 μ F, \pm 20%, 16V |
| CV43 | 24436910 | CD, 91pF |
| CV44 | 24436101 | CD, 100pF |
| CV46(U027) | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CV46(UV01) | 24763101 | EL, 100 μ F, \pm 20%, 16V |
| CV47 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CV48(U027) | 24476103 | CD, 0.01 μ F, \pm 30%, 16V |
| CV48(UV01) | 24203330 | EL, 33 μ F, \pm 20%, 16V |
| CV53 | 24474102 | CD, 1000pF, \pm 10% |
| CV54 | 24474820 | CD, 82pF, \pm 10% |
| CW04 | 24591822 | PF, 8200pF |
| CW05 | 24212103 | CD, 0.01 μ F, \pm 10% |
| CW07 | 24666470 | EL, 47 μ F, \pm 20%, 16V |
| CW12 | 24666470 | EL, 47 μ F, \pm 20%, 16V |
| CW13 | 24790100 | EL, 10 μ F, \pm 20%, 160V |
| CW14 | 24436101 | CD, 100pF |
| CW15 | 24214472 | CD, 4700pF, \pm 10%, 500V |
| CW16 | 24436101 | CD, 100pF |
| CW17 | 24214472 | CD, 4700pF, \pm 10%, 500V |
| CW18 | 24790470 | EL, 47 μ F, \pm 20%, 160V |
| CW19 | 24435560 | CD, 56pF, 500V |
| CW20 | 24790100 | EL, 10 μ F, \pm 20%, 160V |
| CW21 | 24790470 | EL, 47 μ F, \pm 20%, 160V |
| CW22 | 24436561 | CD, 560pF |
| CW26 | 24212102 | CD, 1000pF, \pm 10% |
| CY01 | 24763221 | EL, 220 μ F, \pm 20%, 16V |
| CY601 | 24794101 | EL, 100 μ F, \pm 20%, 16V |
| CY602 | 24797479 | EL, 4.7 μ F, \pm 20%, 50V |
| CY603 | 24797479 | EL, 4.7 μ F, \pm 20%, 50V |
| CY604 | 24794100 | EL, 10 μ F, \pm 20%, 16V |
| CY605 | 24794100 | EL, 10 μ F, \pm 20%, 16V |
| CY606 | 24794100 | EL, 10 μ F, \pm 20%, 16V |
| CY607 | 24797229 | EL, 2.2 μ F, \pm 20%, 50V |
| CY608 | 24794101 | EL, 100 μ F, \pm 20%, 16V |
| CY609 | 24797229 | EL, 2.2 μ F, \pm 20%, 50V |
| CZ07 | 24206229 | EL, 2.2 μ F, 50V |
| CZ08 | 24203100 | EL, 10 μ F, \pm 20%, 16V |
| CZ09 | 24436220 | CD, 22pF |
| CZ10 | 24473180 | CD, 18pF |
| CZ11 | 24473100 | CD, 10pF |
| CZ12 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CZ13 | 24092398 | CD, 0.1 μ F, +80%, -20% |
| CZ14 | 24617816 | EL, 10 μ F, \pm 20%, 50V |
| CZ15 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CZ16 | 24206478 | EL, 0.47 μ F, 50V |
| CZ17 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CZ19 | 24436181 | CD, 180pF |
| CZ20 | 24567103 | PF, 0.01 μ F |
| CZ21 | 24436390 | CD, 39pF |
| CZ22 | 24617816 | EL, 10 μ F, \pm 20%, 50V |
| CZ23 | 24092398 | CD, 0.1 μ F, +80%, -20% |
| CZ24 | 24092398 | CD, 0.1 μ F, +80%, -20% |
| CZ25 | 24203101 | EL, 100 μ F, \pm 20%, 16V |
| CZ26 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CZ28 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CZ29 | 24092398 | CD, 0.1 μ F, +80%, -20% |
| CZ30 | 24617816 | EL, 10 μ F, \pm 20%, 50V |
| CZ32 | 24436120 | CD, 12pF |
| CZ33 | 24436120 | CD, 12pF |
| CZ34 | 24473120 | CD, 12pF |
| CZ35 | 24473120 | CD, 12pF |
| CZ36 | 24232103 | CD, 0.01 μ F, +80%, -20% |

| Location No. | Part No. | Description |
|------------------|----------|------------------------------|
| CZ37 | 24092398 | CD, 0.1 μ F, +80%, -20% |
| CZ38 | 24092398 | CD, 0.1 μ F, +80%, -20% |
| CZ43 | 24232103 | CD, 0.01 μ F, +80%, -20% |
| CZ45 | 24436180 | CD, 18pF |
| RESISTORS | | |
| R101 | 24382153 | OMF, 15k ohm, 1W |
| R201 | 24366821 | CF, 820 ohm |
| R202 | 24366102 | CF, 1k ohm |
| R204 | 24366104 | CF, 100k ohm |
| R205 | 24366101 | CF, 100 ohm |
| R206 | 24366102 | CF, 1k ohm |
| R207 | 24366101 | CF, 100 ohm |
| R208 | 24366101 | CF, 100 ohm |
| R209 | 24366101 | CF, 100 ohm |
| R212 | 24366472 | CF, 4700 ohm |
| R213 | 24366122 | CF, 1200 ohm |
| R214 | 24366222 | CF, 2200 ohm |
| R215 | 24366272 | CF, 2700 ohm |
| R216 | 24366103 | CF, 10k ohm |
| R217 | 24366102 | CF, 1k ohm |
| R218 | 24367103 | CF, 10k ohm, \pm 2% |
| R220 | 24366272 | CF, 2700 ohm |
| R221 | 24366102 | CF, 1k ohm |
| R223 | 24366102 | CF, 1k ohm |
| R224 | 24366475 | CF, 4.7M ohm |
| R227 | 24367912 | CF, 9100 ohm, \pm 2% |
| R230 | 24366562 | CF, 5600 ohm |
| R301 | 24366102 | CF, 1k ohm |
| R303 | 24321129 | MF, 1.2 ohm, 1/2W |
| R304 | 24367223 | CF, 22k ohm, \pm 2% |
| R305 | 24322828 | OMF, 0.82 ohm, 1W |
| R306 | 24367563 | CF, 56k ohm, \pm 2% |
| R307 | 24367224 | CF, 220k ohm |
| R308 | 24382391 | OMF, 390 ohm, 1W |
| R311 | 24366392 | CF, 3900 ohm |
| R312 | 24366153 | CF, 15k ohm |
| R313(U401) | 24367153 | CF, 15k ohm, \pm 2% |
| R313(U029) | 24366104 | CF, 100k ohm |
| R314 | 24366105 | CF, 1M ohm |
| R315 | 24366824 | CF, 820k ohm |
| R316 | 24366154 | CF, 150k ohm |
| R318 | 24366471 | CF, 470 ohm |
| R319 | 24366471 | CF, 470 ohm |
| R320 | 24366101 | CF, 100 ohm |
| R321 | 24366101 | CF, 100 ohm |
| R322 | 24366183 | CF, 18k ohm |
| R323 | 24366562 | CF, 5600 ohm |
| R324 | 24366101 | CF, 100 ohm |
| R325 | 24366183 | CF, 18k ohm |
| △R327 | 24000187 | FR, 3.3 ohm, 1W |
| R328 | 24366104 | CF, 100k ohm |
| R329 | 24366203 | CF, 20k ohm |
| R330 | 24366102 | CF, 1k ohm |
| R334 | 24366102 | CF, 1k ohm |
| △R336 | 24383271 | OMF, 270 ohm, 2W |
| R341 | 24366682 | CF, 6800 ohm |
| R343 | 24366153 | CF, 15k ohm |
| R346 | 24366102 | CF, 1k ohm |
| R347 | 24366184 | CF, 180k ohm |
| R350 | 24366331 | CF, 330 ohm |
| R351 | 24366823 | CF, 82k ohm |
| R352 | 24366104 | CF, 100k ohm |
| R353 | 24366470 | CF, 47 ohm |

| Location No. | Part No. | Description |
|--------------|----------|-------------------------|
| R354 | 24366562 | CF, 5600 ohm |
| R370 | 24321159 | MF, 1.5 ohm, 1/2W |
| R371 | 24366562 | CF, 5600 ohm |
| R372 | 24366392 | CF, 3900 ohm |
| R373 | 24366182 | CF, 1800 ohm |
| R374 | 24366473 | CF, 47k ohm |
| R375 | 24366102 | CF, 1k ohm |
| R389 | 24366222 | CF, 2200 ohm |
| R390 | 24366682 | CF, 6800 ohm |
| R391 | 24366163 | CF, 16k ohm |
| R392 | 24366822 | CF, 8200 ohm |
| R401 | 24366391 | CF, 390 ohm |
| R402 | 24366103 | CF, 10k ohm |
| R403 | 24366302 | CF, 3k ohm |
| R405 | 24382682 | OMF, 6800 ohm, 1W |
| R407 | 24366103 | CF, 10k ohm |
| R409 | 24321209 | MF, 2 ohm, 1/2W |
| R410 | 24366331 | CF, 330 ohm |
| R411 | 24366561 | CF, 560 ohm |
| R413 | 24366274 | CF, 270k ohm |
| R415 | 24553272 | OMF, 2700 ohm, 1W |
| △R416 | 24510562 | Cement, 5600 ohm, 5W |
| R417 | 24366471 | CF, 470 ohm |
| △R424 | 24546338 | FR, 0.33 ohm, 1/2W |
| R425 | 24552471 | OMF, 470 ohm, 1/2W |
| R426 | 24366821 | CF, 820 ohm |
| R427 | 24366392 | CF, 3900 ohm |
| R428 | 24366561 | CF, 560 ohm |
| R429 | 24552560 | OMF, 56 ohm, 1/2W |
| R431 | 24382100 | OMF, 10 ohm, 1W |
| △R432 | 24532560 | FR, 56 ohm, 1W |
| R434 | 24366102 | CF, 1k ohm |
| R435 | 24366333 | CF, 33k ohm |
| R436 | 24327224 | MF, 220k ohm, ±1%, 1/4W |
| R438 | 24381102 | OMF, 1k ohm, 1/2W |
| R439 | 24366472 | CF, 4700 ohm |
| △R441 | 24532102 | FR, 1k ohm, 1W |
| R442 | 24382513 | OMF, 51k ohm, 1W |
| R443 | 24310109 | MF, 1.0 ohm, 1/2W |
| △R444 | 24338398 | MF, 0.39 ohm, 1W |
| R447 | 24382473 | OMF, 47k ohm, 1W |
| R448 | 24338828 | MF, 0.82 ohm, 1W |
| R450 | 24066879 | VR, 1k ohm, 0.3W |
| R451 | 24366273 | CF, 27k ohm |
| R452 | 24366273 | CF, 27k ohm |
| R453 | 24366273 | CF, 27k ohm |
| R454 | 24366223 | CF, 22k ohm |
| R455 | 24366333 | CF, 33k ohm |
| R458 | 24366823 | CF, 82k ohm |
| R459 | 24366273 | CF, 27k ohm |
| R460 | 24552332 | OMF, 3300 ohm, 1/2W |
| R461 | 24003924 | MF, 3300 ohm, 1/4W |
| R462 | 24367103 | CF, 10k ohm, ±2% |
| R463 | 24339479 | MF, 4.7 ohm, 2W |
| R464 | 24366273 | CF, 27k ohm |
| R465 | 24366114 | CF, 110k ohm |
| R466 | 24366562 | CF, 5600 ohm |
| R467 | 24366102 | CF, 1k ohm |
| R468 | 24366333 | CF, 33k ohm |
| R469 | 24381750 | OMF, 75 ohm, 1/2W |
| R471 | 24381301 | OMF, 300 ohm, 1/2W |
| R472 | 24552270 | OMF, 27 ohm, 1/2W |
| R478 | 24376333 | CF, 33k ohm, 1/2W |
| R479 | 24381131 | OMF, 130 ohm, 1/2W |

| Location No. | Part No. | Description |
|--------------|----------|-----------------------|
| R480 | 24552102 | OMF, 1k ohm, 1/2W |
| R481 | 24366393 | CF, 39k ohm |
| R482 | 24366103 | CF, 10k ohm |
| R483 | 24366154 | CF, 150k ohm |
| R484 | 24366473 | CF, 47k ohm |
| R486 | 24382103 | OMF, 10k ohm, 1W |
| R487 | 24366472 | CF, 4700 ohm |
| R488 | 24366474 | CF, 470k ohm |
| R489 | 24366332 | CF, 3300 ohm |
| R490 | 24366332 | CF, 3300 ohm |
| R491 | 24366912 | CF, 9100 ohm |
| R492 | 24366102 | CF, 1k ohm |
| R493 | 24366682 | CF, 6800 ohm |
| R494 | 24366183 | CF, 18k ohm |
| R501 | 24366223 | CF, 22k ohm |
| R502 | 24366101 | CF, 100 ohm |
| R503 | 24366101 | CF, 100 ohm |
| R504 | 24366101 | CF, 100 ohm |
| R505 | 24366102 | CF, 1k ohm |
| R506 | 24366103 | CF, 10k ohm |
| R508 | 24366102 | CF, 1k ohm |
| R509 | 24366102 | CF, 1k ohm |
| R510 | 24366102 | CF, 1k ohm |
| R511 | 24366101 | CF, 100 ohm |
| R512 | 24366101 | CF, 100 ohm |
| R520 | 24366103 | CF, 10k ohm |
| R521 | 24366223 | CF, 22k ohm |
| R522 | 24366473 | CF, 47k ohm |
| R601 | 24366562 | CF, 5600 ohm |
| R602 | 24366562 | CF, 5600 ohm |
| R603 | 24366222 | CF, 2200 ohm |
| R604 | 24366222 | CF, 2200 ohm |
| R607 | 24366100 | CF, 10 ohm |
| R608 | 24366100 | CF, 10 ohm |
| R609 | 24366229 | CF, 2.2 ohm |
| R610 | 24366229 | CF, 2.2 ohm |
| R611 | 24366223 | CF, 22k ohm |
| R612 | 24366223 | CF, 22k ohm |
| R680 | 24366473 | CF, 47k ohm |
| R681 | 24366103 | CF, 10k ohm |
| R683 | 24366223 | CF, 22k ohm |
| R684 | 24366223 | CF, 22k ohm |
| R687 | 24366103 | CF, 10k ohm |
| R688 | 24552391 | OMF, 390 ohm, 1/2W |
| R690 | 24552391 | OMF, 390 ohm, 1/2W |
| R701 | 24872221 | Chip, 220 ohm, 1/16W |
| R702 | 24872221 | Chip, 220 ohm, 1/16W |
| R707 | 24872100 | Chip, 10 ohm, 1/16W |
| R708 | 24872100 | Chip, 10 ohm, 1/16W |
| R709 | 24872100 | Chip, 10 ohm, 1/16W |
| R710 | 24872100 | Chip, 10 ohm, 1/16W |
| R711 | 24872100 | Chip, 10 ohm, 1/16W |
| R712 | 24872100 | Chip, 10 ohm, 1/16W |
| R713 | 24872100 | Chip, 10 ohm, 1/16W |
| R714 | 24872100 | Chip, 10 ohm, 1/16W |
| R715 | 24872153 | Chip, 15k ohm, 1/16W |
| R716 | 24872103 | Chip, 10k ohm, 1/16W |
| R717 | 24872622 | Chip, 6200 ohm, 1/16W |
| R718 | 24872332 | Chip, 3300 ohm, 1/16W |
| R720 | 24872103 | Chip, 10k ohm, 1/16W |
| R721 | 24872223 | Chip, 22k ohm, 1/16W |
| R722 | 24872222 | Chip, 2200 ohm, 1/16W |
| R725 | 24872754 | Chip, 750k ohm, 1/16W |
| R727 | 24871561 | Chip, 560 ohm, 1/8W |

| Location No. | Part No. | Description |
|--------------|----------|---------------------------------------|
| R728 | 24872393 | Chip, 39k ohm, 1/16W |
| R729 | 24872153 | Chip, 15k ohm, 1/16W |
| R735 | 24872911 | Chip, 910 ohm, 1/16W |
| R736 | 24872911 | Chip, 910 ohm, 1/16W |
| R737 | 24872152 | Chip, 1500 ohm, 1/16W |
| R738 | 24872332 | Chip, 3300 ohm, 1/16W |
| R739 | 24872362 | Chip, 3600 ohm, 1/16W |
| R740 | 24872911 | Chip, 910 ohm, 1/16W |
| R741 | 24872911 | Chip, 910 ohm, 1/16W |
| R742 | 24872152 | Chip, 1500 ohm, 1/16W |
| R743 | 24872332 | Chip, 3300 ohm, 1/16W |
| R744 | 24872362 | Chip, 3600 ohm, 1/16W |
| R745 | 24872911 | Chip, 910 ohm, 1/16W |
| R746 | 24872911 | Chip, 910 ohm, 1/16W |
| R747 | 24872152 | Chip, 1500 ohm, 1/16W |
| R748 | 24872332 | Chip, 3300 ohm, 1/16W |
| R749 | 24872362 | Chip, 3600 ohm, 1/16W |
| R750 | 24872911 | Chip, 910 ohm, 1/16W |
| R751 | 24872911 | Chip, 910 ohm, 1/16W |
| R752 | 24872152 | Chip, 1500 ohm, 1/16W |
| R753 | 24872332 | Chip, 3300 ohm, 1/16W |
| R754 | 24872362 | Chip, 3600 ohm, 1/16W |
| R755 | 24872911 | Chip, 910 ohm, 1/16W |
| R756 | 24872911 | Chip, 910 ohm, 1/16W |
| R757 | 24872152 | Chip, 1500 ohm, 1/16W |
| R758 | 24872332 | Chip, 3300 ohm, 1/16W |
| R759 | 24872362 | Chip, 3600 ohm, 1/16W |
| R760 | 24872911 | Chip, 910 ohm, 1/16W |
| R761 | 24872911 | Chip, 910 ohm, 1/16W |
| R762 | 24872152 | Chip, 1500 ohm, 1/16W |
| R763 | 24872332 | Chip, 3300 ohm, 1/16W |
| R764 | 24872362 | Chip, 3600 ohm, 1/16W |
| R778 | 24872101 | Chip, 100 ohm, 1/16W |
| R779 | 24872101 | Chip, 100 ohm, 1/16W |
| R780 | 24872101 | Chip, 100 ohm, 1/16W |
| R781 | 24872101 | Chip, 100 ohm, 1/16W |
| R782 | 24872101 | Chip, 100 ohm, 1/16W |
| R783 | 24872101 | Chip, 100 ohm, 1/16W |
| R786 | 24872472 | Chip, 4700 ohm, 1/16W |
| R787 | 24872472 | Chip, 4700 ohm, 1/16W |
| △ R801 | 24009954 | Metal-Glazed Resistor, 2.2M ohm, 1/2W |
| R803 | 24384223 | OMF, 22k ohm, 3W |
| △ R804 | 24545109 | FR, 1 ohm, 1/4W |
| R805 | 24366101 | CF, 100 ohm |
| R806 | 24007061 | Cement, 1.8 ohm, ±10%, 2W |
| △ R807 | 24510479 | Cement, 4.7 ohm, 5W |
| R808 | 24552472 | OMF, 4700 ohm, 1/2W |
| R812 | 24381103 | OMF, 10k ohm, 1/2W |
| R813 | 24366182 | CF, 1800 ohm |
| R814 | 24366122 | CF, 1200 ohm |
| R815 | 24552102 | OMF, 1k ohm, 1/2W |
| R816 | 24323689 | MF, 6.8 ohm, 2W |
| R817 | 24366472 | CF, 4700 ohm |
| R818 | 24322278 | MF, 0.27 ohm, 1W |
| R819 | 24321568 | MF, 0.56 ohm, 1/2W |
| R821 | 24366101 | CF, 100 ohm |
| R822 | 24321568 | MF, 0.56 ohm, 1/2W |
| R824 | 24366472 | CF, 4700 ohm |
| R825 | 24366153 | CF, 15k ohm |
| R826 | 24366104 | CF, 100k ohm |
| R827 | 24366102 | CF, 1k ohm |
| R828 | 24366562 | CF, 5600 ohm |
| R829 | 24322278 | MF, 0.27 ohm, 1W |

| Location No. | Part No. | Description |
|--------------|----------|-------------------------------------|
| △ R830 | 24569181 | Cement, 180 ohm, 10W |
| R831 | 24383152 | OMF, 1.5k ohm, 2W |
| R832 | 24383152 | OMF, 1.5k ohm, 2W |
| R835 | 24366682 | CF, 6800 ohm |
| R836(U401) | 24327620 | MF, 62 ohm, ±1% |
| R836(U901) | 24366101 | CF, 100 ohm |
| R837 | 24000145 | MF, 330 ohm, ±1%, 1/4W |
| R838 | 24366103 | CF, 10k ohm |
| R840 | 24366681 | CF, 680 ohm |
| R842 | 24381471 | OMF, 470 ohm, 1/2W |
| R843 | 24552561 | OMF, 560 ohm, 1/2W |
| R847 | 24366102 | CF, 1k ohm |
| R848 | 24366472 | CF, 4700 ohm |
| R849 | 24366472 | CF, 4700 ohm |
| R850 | 24545109 | FR, 1 ohm, 1/4W |
| R851 | 24545109 | FR, 1 ohm, 1/4W |
| △ R861 | 24569229 | Cement, 2.2 ohm, 10W |
| R862 | 24384223 | OMF, 22k ohm, 3W |
| R863 | 24383180 | OMF, 18 ohm, 2W |
| R864 | 24366101 | CF, 100 ohm |
| R865 | 24323518 | OMF, 0.51 ohm, 2W |
| R866 | 24552102 | OMF, 1k ohm, 1/2W |
| R867 | 24321568 | MF, 0.56 ohm, 1/2W |
| R868 | 24552103 | OMF, 10k ohm, 1/2W |
| R869 | 24366272 | CF, 2700 ohm |
| R870 | 24366122 | CF, 1200 ohm |
| R871 | 24366272 | CF, 2700 ohm |
| R872 | 24366392 | CF, 3900 ohm |
| R879 | 24366102 | CF, 1k ohm |
| R882 | 24366472 | CF, 4700 ohm |
| R883 | 24366472 | CF, 4700 ohm |
| R884 | 24366472 | CF, 4700 ohm |
| R885 | 24366472 | CF, 4700 ohm |
| R886 | 24366472 | CF, 4700 ohm |
| R887 | 24552162 | OMF, 1600 ohm, 1/2W |
| R889 | 24366102 | CF, 1k ohm |
| R890 | 24382333 | OMF, 33k ohm, 1W |
| R892 | 24552471 | OMF, 470 ohm, 1/2W |
| R893 | 24552561 | OMF, 560 ohm, 1/2W |
| R894 | 24366562 | CF, 5600 ohm |
| R895 | 24531120 | FR, 12 ohm, 1/2W |
| R896 | 24366102 | CF, 1k ohm |
| R897 | 24366101 | CF, 100 ohm |
| R898 | 24366681 | CF, 680 ohm |
| △ R899 | 24005007 | Metal-Glazed Resistor, 8.2M ohm, 1W |
| R901 | 24366101 | CF, 100 ohm |
| R902 | 24366101 | CF, 100 ohm |
| R904 | 24366102 | CF, 1k ohm |
| R905 | 24366151 | CF, 150 ohm |
| R906 | 24366471 | CF, 470 ohm |
| R907 | 24327131 | MF, 130 ohm, ±1%, 1/4W |
| R908 | 24366430 | CF, 43 ohm |
| R909 | 24366300 | CF, 30 ohm |
| R911 | 24366101 | CF, 100 ohm |
| R912 | 24366101 | CF, 100 ohm |
| R914 | 24366102 | CF, 1k ohm |
| R915 | 24366121 | CF, 120 ohm |
| R916 | 24366471 | CF, 470 ohm |
| R917 | 24327131 | MF, 130 ohm, ±1%, 1/4W |
| R918 | 24366430 | CF, 43 ohm |
| R919 | 24366300 | CF, 30 ohm |
| R921 | 24366101 | CF, 100 ohm |
| R922 | 24366101 | CF, 100 ohm |

| Location No. | Part No. | Description |
|--------------|----------|------------------------------|
| R924 | 24366102 | CF, 1k ohm |
| R925 | 24366151 | CF, 150 ohm |
| R926 | 24366471 | CF, 470 ohm |
| R927 | 24327270 | MF, 27 ohm, $\pm 1\%$, 1/4W |
| R928 | 24366430 | CF, 43 ohm |
| R929 | 24366300 | CF, 30 ohm |
| R931 | 24555153 | OMF, 15k ohm, 3W |
| R932 | 24555153 | OMF, 15k ohm, 3W |
| R933 | 24000945 | FR, 1.8 ohm, 2W |
| R934 | 24942121 | CC, 120 ohm, 1/2W |
| R935 | 24366150 | CF, 15 ohm |
| R941 | 24555153 | OMF, 15k ohm, 3W |
| R942 | 24555153 | OMF, 15k ohm, 3W |
| R943 | 24366103 | CF, 10k ohm |
| R944 | 24366120 | CF, 12 ohm |
| R945 | 24366101 | CF, 100 ohm |
| R946 | 24366102 | CF, 1k ohm |
| R947 | 24366562 | CF, 5600 ohm |
| R948 | 24366361 | CF, 360 ohm |
| R949 | 24366821 | CF, 820 ohm |
| R950 | 24366122 | CF, 1200 ohm |
| R951 | 24555153 | OMF, 15k ohm, 3W |
| R952 | 24555153 | OMF, 15k ohm, 3W |
| R953 | 24366390 | CF, 39 ohm |
| R954 | 24366221 | CF, 220 ohm |
| R955 | 24366151 | CF, 150 ohm |
| R957 | 24366821 | CF, 820 ohm |
| R961 | 24366821 | CF, 820 ohm |
| R962 | 24366391 | CF, 390 ohm |
| R963 | 24366222 | CF, 2200 ohm |
| R964 | 24366332 | CF, 3300 ohm |
| R965 | 24366471 | CF, 470 ohm |
| R966 | 24366821 | CF, 820 ohm |
| R967 | 24366122 | CF, 1200 ohm |
| R968 | 24366101 | CF, 100 ohm |
| R969 | 24366103 | CF, 10k ohm |
| R970 | 24366222 | CF, 2200 ohm |
| R971 | 24367152 | CF, 1500 ohm, $\pm 2\%$ |
| R972 | 24367471 | CF, 470 ohm, $\pm 2\%$ |
| R973 | 24367681 | CF, 680 ohm, $\pm 2\%$ |
| R974 | 24367681 | CF, 680 ohm, $\pm 2\%$ |
| R975 | 24366242 | CF, 2400 ohm |
| R976 | 24367682 | CF, 6800 ohm, $\pm 2\%$ |
| R977 | 24367152 | CF, 1500 ohm, $\pm 2\%$ |
| R978 | 24367681 | CF, 680 ohm, $\pm 2\%$ |
| R7707 | 24366472 | CF, 4700 ohm |
| R7708 | 24366472 | CF, 4700 ohm |
| △R7710 | 24555680 | OMF, 68 ohm, 3W |
| △R7711 | 24323229 | MF, 2.2 ohm, 2W |
| R7712 | 24366472 | CF, 4700 ohm |
| R7713 | 24366472 | CF, 4700 ohm |
| △R7715 | 24555680 | OMF, 68 ohm, 3W |
| △R7716 | 24323229 | MF, 2.2 ohm, 2W |
| R7717 | 24366472 | CF, 4700 ohm |
| R7718 | 24366472 | CF, 4700 ohm |
| △R7720 | 24555680 | OMF, 68 ohm, 3W |
| △R7721 | 24323229 | MF, 2.2 ohm, 2W |
| R7722 | 24366472 | CF, 4700 ohm |
| R7723 | 24366472 | CF, 4700 ohm |
| △R7725 | 24555680 | OMF, 68 ohm, 3W |
| △R7726 | 24323229 | MF, 2.2 ohm, 2W |
| R7727 | 24366472 | CF, 4700 ohm |
| R7728 | 24366472 | CF, 4700 ohm |
| △R7730 | 24555680 | OMF, 68 ohm, 3W |

| Location No. | Part No. | Description |
|--------------|----------|---------------------|
| △R7731 | 24323229 | MF, 2.2 ohm, 2W |
| R7732 | 24366472 | CF, 4700 ohm |
| R7733 | 24366472 | CF, 4700 ohm |
| △R7735 | 24555680 | OMF, 68 ohm, 3W |
| △R7736 | 24323229 | MF, 2.2 ohm, 2W |
| R7738 | 24554101 | OMF, 100 ohm, 2W |
| R7741 | 24366102 | CF, 1k ohm |
| R7742 | 24366332 | CF, 3300 ohm |
| R7743 | 24366223 | CF, 22k ohm |
| R7744 | 24366222 | CF, 2200 ohm |
| R7745 | 24366332 | CF, 3300 ohm |
| R7746 | 24366223 | CF, 22k ohm |
| R7747 | 24366222 | CF, 2200 ohm |
| R7749 | 24366331 | CF, 330 ohm |
| △R7750 | 24323278 | MF, 0.27 ohm, 2W |
| R7751 | 24366471 | CF, 470 ohm |
| R7757 | 24366223 | CF, 22k ohm |
| R7758 | 24366222 | CF, 2200 ohm |
| R7763 | 24366471 | CF, 470 ohm |
| R7764 | 24366331 | CF, 330 ohm |
| △R7765 | 24339398 | MF, 0.39 ohm, 2W |
| R7766 | 24366223 | CF, 22k ohm |
| R7767 | 24366223 | CF, 22k ohm |
| R7768 | 24366102 | CF, 1k ohm |
| R7771 | 24366102 | CF, 1k ohm |
| R7772 | 24366102 | CF, 1k ohm |
| R7774 | 24554151 | OMF, 10k ohm, 2W |
| R7775 | 24366273 | CF, 27k ohm |
| R7776 | 24366472 | CF, 4700 ohm |
| R7777 | 24366273 | CF, 27k ohm |
| R7778 | 24366472 | CF, 4700 ohm |
| R7779 | 24366102 | CF, 1k ohm |
| R7780 | 24366102 | CF, 1k ohm |
| R7781 | 24366333 | CF, 33k ohm |
| △R7782 | 24339828 | OMF, 0.82 ohm, 2W |
| R7783 | 24366331 | CF, 330 ohm |
| R7784 | 24366471 | CF, 470 ohm |
| R7785 | 24366222 | CF, 2200 ohm |
| R7786 | 24366103 | CF, 10k ohm |
| R7787 | 24366104 | CF, 100k ohm |
| R7788 | 24366103 | CF, 10k ohm |
| R7789 | 24366471 | CF, 470 ohm |
| R7790 | 24552182 | OMF, 1800 ohm, 1/2W |
| R7791 | 24552681 | OMF, 680 ohm, 1/2W |
| R7792 | 24366471 | CF, 470 ohm |
| R7793 | 24366333 | CF, 33k ohm |
| R7794 | 24366104 | CF, 100k ohm |
| R7795 | 24366104 | CF, 100k ohm |
| R7796 | 24366334 | CF, 330k ohm |
| R7801 | 24366472 | CF, 4700 ohm |
| R7802 | 24366103 | CF, 10k ohm |
| R7803 | 24366102 | CF, 1k ohm |
| R7804 | 24366103 | CF, 10k ohm |
| RA02 | 24366272 | CF, 2700 ohm |
| RA03 | 24366102 | CF, 1k ohm |
| RA04 | 24366102 | CF, 1k ohm |
| RA05 | 24366102 | CF, 1k ohm |
| RA07 | 24366102 | CF, 1k ohm |
| RA08 | 24366102 | CF, 1k ohm |
| RA13 | 24366123 | CF, 12k ohm |
| RA16 | 24366102 | CF, 1k ohm |
| RA17 | 24366102 | CF, 1k ohm |
| RA18 | 24366102 | CF, 1k ohm |
| RA22 | 24366331 | CF, 330 ohm |

| Location No. | Part No. | Description |
|--------------|----------|--------------|
| RA23 | 24366331 | CF, 330 ohm |
| RA24 | 24366331 | CF, 330 ohm |
| RA25 | 24366101 | CF, 100 ohm |
| RA26 | 24366102 | CF, 1k ohm |
| RA27 | 24366102 | CF, 1k ohm |
| RA33 | 24366103 | CF, 10k ohm |
| RA35 | 24366102 | CF, 1k ohm |
| RA36 | 24366472 | CF, 4700 ohm |
| RA37 | 24366101 | CF, 100 ohm |
| RA38 | 24366101 | CF, 100 ohm |
| RA40 | 24366102 | CF, 1k ohm |
| RA41 | 24366102 | CF, 1k ohm |
| RA61 | 24366103 | CF, 10k ohm |
| RA62 | 24366103 | CF, 10k ohm |
| RA67 | 24366472 | CF, 4700 ohm |
| RA68 | 24366472 | CF, 4700 ohm |
| RA70 | 24366333 | CF, 33k ohm |
| RA71 | 24366683 | CF, 68k ohm |
| RA72 | 24366223 | CF, 22k ohm |
| RA73 | 24366103 | CF, 10k ohm |
| RA75 | 24366333 | CF, 33k ohm |
| RA76(U026) | 24366103 | CF, 10k ohm |
| RA76(U026) | 24366102 | CF, 1k ohm |
| RA77 | 24366223 | CF, 22k ohm |
| RA79 | 24366103 | CF, 10k ohm |
| RA80 | 24366103 | CF, 10k ohm |
| RA85 | 24366101 | CF, 100 ohm |
| RA86 | 24366101 | CF, 100 ohm |
| RA87 | 24366102 | CF, 1k ohm |
| RB01 | 24366271 | CF, 270 ohm |
| RB02 | 24366221 | CF, 220 ohm |
| RB03 | 24366101 | CF, 100 ohm |
| RB04 | 24366223 | CF, 22k ohm |
| RB09 | 24366470 | CF, 47 ohm |
| RB11 | 24366103 | CF, 10k ohm |
| RB20 | 24366823 | CF, 82k ohm |
| RB30 | 24366103 | CF, 10k ohm |
| RB40 | 24366103 | CF, 10k ohm |
| RB41 | 24366821 | CF, 820 ohm |
| RB42 | 24366102 | CF, 1k ohm |
| RB43 | 24366103 | CF, 10k ohm |
| RB44 | 24366103 | CF, 10k ohm |
| RB45 | 24366101 | CF, 100 ohm |
| RB61 | 24366473 | CF, 47k ohm |
| RB62 | 24366222 | CF, 2200 ohm |
| RB63 | 24366473 | CF, 47k ohm |
| RB64 | 24366473 | CF, 47k ohm |
| RB65 | 24366104 | CF, 100k ohm |
| RB66 | 24366222 | CF, 2200 ohm |
| RB67 | 24366473 | CF, 47k ohm |
| RB68 | 24366103 | CF, 10k ohm |
| RB69 | 24366332 | CF, 3300 ohm |
| RB70 | 24366562 | CF, 5600 ohm |
| RB71 | 24366473 | CF, 47k ohm |
| RB72 | 24366223 | CF, 22k ohm |
| RB90 | 24366472 | CF, 4700 ohm |
| RB91 | 24366472 | CF, 4700 ohm |
| RB92 | 24366101 | CF, 100 ohm |
| RB93 | 24366101 | CF, 100 ohm |
| RB94 | 24366472 | CF, 4700 ohm |
| RB95 | 24366101 | CF, 100 ohm |
| RB96 | 24366101 | CF, 100 ohm |
| RB97 | 24366472 | CF, 4700 ohm |
| RB98 | 24366101 | CF, 100 ohm |

| Location No. | Part No. | Description |
|--------------|----------|--------------|
| RD80 | 24366822 | CF, 8200 ohm |
| RD81 | 24366152 | CF, 1500 ohm |
| RD82 | 24366472 | CF, 4700 ohm |
| RD83 | 24366102 | CF, 1k ohm |
| RG01 | 24366223 | CF, 22k ohm |
| RG02 | 24366223 | CF, 22k ohm |
| RG03 | 24366101 | CF, 100 ohm |
| RG04 | 24366101 | CF, 100 ohm |
| RG05 | 24366223 | CF, 22k ohm |
| RG09 | 24366472 | CF, 4700 ohm |
| RG10 | 24366822 | CF, 8200 ohm |
| RG11 | 24366472 | CF, 4700 ohm |
| RG12 | 24366822 | CF, 8200 ohm |
| RQ01 | 24366102 | CF, 1k ohm |
| RQ02 | 24366475 | CF, 4.7M ohm |
| RQ03 | 24366102 | CF, 1k ohm |
| RQ04 | 24366511 | CF, 510 ohm |
| RQ05 | 24366471 | CF, 470 ohm |
| RQ06 | 24366471 | CF, 470 ohm |
| RQ07 | 24366103 | CF, 10k ohm |
| RQ08 | 24366102 | CF, 1k ohm |
| RQ09 | 24366102 | CF, 1k ohm |
| RQ10 | 24366102 | CF, 1k ohm |
| RQ11 | 24366561 | CF, 560 ohm |
| RQ12 | 24366561 | CF, 560 ohm |
| RQ13 | 24366103 | CF, 10k ohm |
| RQ14 | 24366243 | CF, 24k ohm |
| RR01 | 24366472 | CF, 4700 ohm |
| RR02 | 24366472 | CF, 4700 ohm |
| RR03 | 24366472 | CF, 4700 ohm |
| RR12 | 24366223 | CF, 22k ohm |
| RR17 | 24366102 | CF, 1k ohm |
| RR18 | 24366102 | CF, 1k ohm |
| RR21 | 24366103 | CF, 10k ohm |
| RR22 | 24366473 | CF, 47k ohm |
| RR23 | 24366101 | CF, 100 ohm |
| RR24 | 24366101 | CF, 100 ohm |
| RR25 | 24366101 | CF, 100 ohm |
| RR26 | 24366101 | CF, 100 ohm |
| RR27 | 24366473 | CF, 47k ohm |
| RR28 | 24366473 | CF, 47k ohm |
| RR29 | 24366473 | CF, 47k ohm |
| RR30 | 24366432 | CF, 4300 ohm |
| RR31 | 24366471 | CF, 470 ohm |
| RR33 | 24366821 | CF, 820 ohm |
| RR34 | 24366821 | CF, 820 ohm |
| RR35 | 24366821 | CF, 820 ohm |
| RR36 | 24366332 | CF, 3300 ohm |
| RR37 | 24366332 | CF, 3300 ohm |
| RR38 | 24366332 | CF, 3300 ohm |
| RR39 | 24366222 | CF, 2200 ohm |
| RR40(U901) | 24366122 | CF, 1200 ohm |
| RR40(UM01) | 24366683 | CF, 68k ohm |
| RR41(UM01) | 24366103 | CF, 10k ohm |
| RR41(U901) | 24366272 | CF, 2700 ohm |
| RR42(U901) | 24366122 | CF, 1200 ohm |
| RR42(UM01) | 24366334 | CF, 330k ohm |
| RR43 | 24366272 | CF, 2700 ohm |
| RR44 | 24366122 | CF, 1200 ohm |
| RR45 | 24366272 | CF, 2700 ohm |
| RR93 | 24366472 | CF, 4700 ohm |
| RR94 | 24366222 | CF, 2200 ohm |
| RR95 | 24366331 | CF, 330 ohm |
| RR96 | 24366331 | CF, 330 ohm |

| Location No. | Part No. | Description |
|--------------|----------|--------------|
| RR97 | 24366331 | CF, 330 ohm |
| RR98 | 24366331 | CF, 330 ohm |
| RR99 | 24366102 | CF, 1k ohm |
| RR100 | 24366102 | CF, 1k ohm |
| RR101 | 24366102 | CF, 1k ohm |
| RR102 | 24366102 | CF, 1k ohm |
| RS01 | 24366101 | CF, 100 ohm |
| RS03 | 24366101 | CF, 100 ohm |
| RS04 | 24366101 | CF, 100 ohm |
| RS05 | 24366102 | CF, 1k ohm |
| RS07 | 24366472 | CF, 4700 ohm |
| RS08 | 24366472 | CF, 4700 ohm |
| RS09 | 24366472 | CF, 4700 ohm |
| RS10 | 24366472 | CF, 4700 ohm |
| RS11 | 24366472 | CF, 4700 ohm |
| RS12 | 24366472 | CF, 4700 ohm |
| RS13 | 24366101 | CF, 100 ohm |
| RS14 | 24366101 | CF, 100 ohm |
| RS25 | 24366103 | CF, 10k ohm |
| RS26 | 24366103 | CF, 10k ohm |
| RS27 | 24366561 | CF, 560 ohm |
| RS28 | 24366561 | CF, 560 ohm |
| RS29 | 24366103 | CF, 10k ohm |
| RS30 | 24366103 | CF, 10k ohm |
| RS31 | 24366102 | CF, 1k ohm |
| RS32 | 24366103 | CF, 10k ohm |
| RS33 | 24366101 | CF, 100 ohm |
| RS34 | 24366102 | CF, 1k ohm |
| RS35 | 24366101 | CF, 100 ohm |
| RS36 | 24366102 | CF, 1k ohm |
| RS45 | 24366393 | CF, 39k ohm |
| RS46 | 24366393 | CF, 39k ohm |
| RS47 | 24366102 | CF, 1k ohm |
| RS48 | 24366102 | CF, 1k ohm |
| RS601 | 24366101 | CF, 100 ohm |
| RS602 | 24366101 | CF, 100 ohm |
| RS603 | 24366102 | CF, 1k ohm |
| RS604 | 24366102 | CF, 1k ohm |
| RS605 | 24366561 | CF, 560 ohm |
| RS606 | 24366561 | CF, 560 ohm |
| RS607 | 24366104 | CF, 100k ohm |
| RS608 | 24366104 | CF, 100k ohm |
| RS609 | 24366103 | CF, 10k ohm |
| RS610 | 24366103 | CF, 10k ohm |
| RS611 | 24366103 | CF, 10k ohm |
| RS612 | 24366104 | CF, 100k ohm |
| RT01 | 24366332 | CF, 3300 ohm |
| RT02 | 24366100 | CF, 10 ohm |
| RT03 | 24366101 | CF, 100 ohm |
| RT04 | 24366273 | CF, 27k ohm |
| RT05 | 24366103 | CF, 10k ohm |
| RT06 | 24366103 | CF, 10k ohm |
| RT07 | 24366102 | CF, 1k ohm |
| RT08 | 24366103 | CF, 10k ohm |
| RT09 | 24366101 | CF, 100 ohm |
| RT10 | 24366472 | CF, 4700 ohm |
| RT11 | 24366392 | CF, 3900 ohm |
| RT12 | 24366682 | CF, 6800 ohm |
| RT13 | 24366103 | CF, 10k ohm |
| RT14 | 24366222 | CF, 2200 ohm |
| RT15 | 24366101 | CF, 100 ohm |
| RT16 | 24366101 | CF, 100 ohm |
| RT17 | 24366102 | CF, 1k ohm |
| RT18 | 24366152 | CF, 1500 ohm |

| Location No. | Part No. | Description |
|--------------|----------|--------------------|
| RT19 | 24366122 | CF, 1200 ohm |
| RT20 | 24366471 | CF, 470 ohm |
| RT22 | 24366102 | CF, 1k ohm |
| RT23 | 24366102 | CF, 1k ohm |
| RV01 | 24366101 | CF, 100 ohm |
| RV02 | 24366101 | CF, 100 ohm |
| RV03 | 24366101 | CF, 100 ohm |
| RV04 | 24366101 | CF, 100 ohm |
| RV05 | 24366101 | CF, 100 ohm |
| RV06 | 24366101 | CF, 100 ohm |
| RV09 | 24366101 | CF, 100 ohm |
| RV10 | 24366101 | CF, 100 ohm |
| RV11 | 24366101 | CF, 100 ohm |
| RV12 | 24366101 | CF, 100 ohm |
| RV13 | 24366101 | CF, 100 ohm |
| RV14 | 24366101 | CF, 100 ohm |
| RV15 | 24366101 | CF, 100 ohm |
| RV16 | 24366101 | CF, 100 ohm |
| RV17 | 24366101 | CF, 100 ohm |
| RV19 | 24366101 | CF, 100 ohm |
| RV20 | 24366332 | CF, 3300 ohm |
| RV35 | 24366103 | CF, 10k ohm |
| RV37 | 24366750 | CF, 75 ohm |
| RV40 | 24366822 | CF, 8200 ohm |
| RV41 | 24366472 | CF, 4700 ohm |
| RV42 | 24366471 | CF, 470 ohm |
| RV43 | 24366471 | CF, 470 ohm |
| RV44 | 24366821 | CF, 820 ohm |
| RV45 | 24366151 | CF, 150 ohm |
| RV46 | 24366102 | CF, 1k ohm |
| RV47 | 24366102 | CF, 1k ohm |
| RV48 | 24366911 | CF, 910 ohm |
| RV49 | 24366102 | CF, 1k ohm |
| RV50 | 24366682 | CF, 6800 ohm |
| RV51 | 24366822 | CF, 8200 ohm |
| RV52 | 24366101 | CF, 100 ohm |
| RV53 | 24366471 | CF, 470 ohm |
| RV54 | 24366471 | CF, 470 ohm |
| RV56 | 24366511 | CF, 510 ohm |
| RV57 | 24366102 | CF, 1k ohm |
| RV58 | 24366911 | CF, 910 ohm |
| RV59 | 24366102 | CF, 1k ohm |
| RV60 | 24366682 | CF, 6800 ohm |
| RV61 | 24366750 | CF, 75 ohm |
| RV62 | 24366103 | CF, 10k ohm |
| RV63 | 24366104 | CF, 100k ohm |
| RV64 | 24366224 | CF, 220k ohm |
| RV65 | 24366103 | CF, 10k ohm |
| RV67 | 24366750 | CF, 75 ohm |
| RV70 | 24366750 | CF, 75 ohm |
| RV75 | 24366750 | CF, 75 ohm |
| RV76 | 24366103 | CF, 10k ohm |
| RV77 | 24366101 | CF, 100 ohm |
| RV78 | 24366181 | CF, 180 ohm |
| RV80 | 24366682 | CF, 6800 ohm |
| RV84 | 24366101 | CF, 100 ohm |
| RV85 | 24366201 | CF, 200 ohm |
| RV89 | 24366750 | CF, 75 ohm |
| RV89 | 24366750 | CF, 75 ohm |
| RV91 | 24552101 | OMF, 100 ohm, 1/2W |
| RV95 | 24366471 | CF, 470 ohm |
| RV100 | 24366101 | CF, 100 ohm |
| RV101 | 24366272 | CF, 2700 ohm |
| RV102 | 24366271 | CF, 270 ohm |

| Location No. | Part No. | Description |
|--------------|----------|--------------------|
| RV103 | 24366473 | CF, 47k ohm |
| RV104 | 24366100 | CF, 10 ohm |
| RV105 | 24366272 | CF, 2700 ohm |
| RV106 | 24366223 | CF, 22k ohm |
| RV107 | 24366223 | CF, 22k ohm |
| RV108 | 24366103 | CF, 10k ohm |
| RV109 | 24366103 | CF, 10k ohm |
| RV110 | 24366123 | CF, 12k ohm |
| RV111 | 24366103 | CF, 10k ohm |
| RW02 | 24366222 | CF, 2200 ohm |
| RW09 | 24366563 | CF, 56k ohm |
| RW13 | 24366393 | CF, 39k ohm |
| RW14 | 24552121 | OMF, 120 ohm, 1/2W |
| RW15 | 24366223 | CF, 22k ohm |
| RW16 | 24366273 | CF, 27k ohm |
| RW17 | 24366333 | CF, 33k ohm |
| RW18 | 24366222 | CF, 2200 ohm |
| RW19 | 24366392 | CF, 3900 ohm |
| RW20 | 24366392 | CF, 3900 ohm |
| RW21 | 24366102 | CF, 1k ohm |
| RW22 | 24552471 | OMF, 470 ohm, 1/2W |
| RW23 | 24366471 | CF, 470 ohm |
| RW24 | 24366470 | CF, 47 ohm |
| RW25 | 24366182 | CF, 1800 ohm |
| RW30 | 24552100 | OMF, 10 ohm, 1/2W |
| RW31 | 24552331 | OMF, 330 ohm, 1/2W |
| RW32 | 24366820 | CF, 82 ohm |
| RW33 | 24366683 | CF, 68k ohm |
| RW34 | 24366820 | CF, 82 ohm |
| RW35 | 24366683 | CF, 68k ohm |
| RW36 | 24552620 | OMF, 62 ohm, 1/2W |
| RW37 | 24366152 | CF, 1500 ohm |
| RW38 | 24366123 | CF, 12k ohm |
| RW39 | 24366152 | CF, 1500 ohm |
| RW40 | 24552620 | OMF, 62 ohm, 1/2W |
| RW41 | 24321279 | MF, 2.7 ohm, 1/2W |
| RW42 | 24321279 | MF, 2.7 ohm, 1/2W |
| RW43 | 24554221 | OMF, 220 ohm, 2W |
| RW44 | 24366122 | CF, 1200 ohm |
| RW45 | 24366122 | CF, 1200 ohm |
| RY604 | 24366123 | CF, 12k ohm |
| RY605 | 24366682 | CF, 6800 ohm |
| RY606 | 24366333 | CF, 33k ohm |
| RY607 | 24366392 | CF, 3900 ohm |
| RY608 | 24366123 | CF, 12k ohm |
| RY609 | 24366102 | CF, 1k ohm |
| RY610 | 24366104 | CF, 100k ohm |
| RY611 | 24366473 | CF, 47k ohm |
| RY612 | 24366102 | CF, 1k ohm |
| RY613 | 24382121 | OMF, 120 ohm, 1W |
| RY614 | 24366103 | CF, 10k ohm |
| RY615 | 24366223 | CF, 22k ohm |
| RY616 | 24366104 | CF, 100k ohm |
| RY617 | 24366183 | CF, 18k ohm |
| RY631 | 24366100 | CF, 10 ohm |
| RY632 | 24366100 | CF, 10 ohm |
| RZ01 | 24366471 | CF, 470 ohm |
| RZ02 | 24366152 | CF, 1500 ohm |
| RZ04 | 24366332 | CF, 3300 ohm |
| RZ05 | 24366332 | CF, 3300 ohm |
| RZ06 | 24366821 | CF, 820 ohm |
| RZ07 | 24366822 | CF, 8200 ohm |
| RZ08 | 24366332 | CF, 3300 ohm |
| RZ12 | 24366471 | CF, 470 ohm |

| Location No. | Part No. | Description |
|---------------------------------|----------|-------------------------------|
| RZ14 | 24366123 | CF, 12k ohm |
| RZ15 | 24366392 | CF, 3900 ohm |
| RZ16 | 24366122 | CF, 1200 ohm |
| RZ17 | 24366331 | CF, 330 ohm |
| RZ18 | 24366821 | CF, 820 ohm |
| RZ19 | 24366471 | CF, 470 ohm |
| RZ20 | 24366122 | CF, 1200 ohm |
| RZ21 | 24366680 | CF, 68 ohm |
| RZ22 | 24366101 | CF, 100 ohm |
| RZ23 | 24366821 | CF, 820 ohm |
| RZ24 | 24366821 | CF, 820 ohm |
| RZ25 | 24366101 | CF, 100 ohm |
| RZ26 | 24366101 | CF, 100 ohm |
| RZ28 | 24366564 | CF, 560k ohm |
| RZ29 | 24366331 | CF, 330 ohm |
| RZ30 | 24366331 | CF, 330 ohm |
| RZ31 | 24366102 | CF, 1k ohm |
| COILS & TRANSFORMERS | | |
| L101 | 23289101 | Coil, Peaking, TRF4101AF |
| L102 | 23289100 | Coil, Peaking, TRF4100AF |
| L103 | 23289100 | Coil, Peaking, TRF4100AF |
| L111 | 23237999 | Coil, Peaking, TRF4109AC |
| L112 | 23237999 | Coil, Peaking, TRF4109AC |
| L115 | 23103824 | Coil, TEM2028K |
| L301 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L303 | 23237975 | Coil, Peaking, TRF4101AC |
| L400 | 23289100 | Coil, Peaking, TRF4100AF |
| L401 | 23221746 | Coil, Choke, TLN3155D |
| L441 | 23233947 | Coil, Linearity, TLN2144G |
| L450 | 23233961 | Coil, Width, TLN2184 |
| L461 | 23248115 | Coil, Choke, TLN3367D |
| △ L462 | 23231135 | Deflection Yoke, TDY707AS(R) |
| △ L463 | 23231136 | Deflection Yoke, TDY707AS(G) |
| L463(U401) | 23103880 | Coil (Ferrite Bead), TEM2011Y |
| △ L464 | 23231137 | Deflection Yoke, TDY707AS(B) |
| L472 | 23102445 | Magnet, MAG1096 |
| L473 | 23102445 | Magnet, MAG1096 |
| L474 | 23102445 | Magnet, MAG1096 |
| L501 | 23289470 | Coil, Peaking, TRF4470AF |
| L502 | 23289470 | Coil, Peaking, TRF4470AF |
| L503 | 23289470 | Coil, Peaking, TRF4470AF |
| L504 | 23289479 | Coil, Peaking, TRF44R7AF |
| L701 | 23238562 | Coil, Peaking, TRF4109AJ |
| L702 | 23238562 | Coil, Peaking, TRF4109AJ |
| L707 | 23238562 | Coil, Peaking, TRF4109AJ |
| L708 | 23238562 | Coil, Peaking, TRF4109AJ |
| L709 | 23238562 | Coil, Peaking, TRF4109AJ |
| L710 | 23238562 | Coil, Peaking, TRF4109AJ |
| L711 | 23238562 | Coil, Peaking, TRF4109AJ |
| L712 | 23238562 | Coil, Peaking, TRF4109AJ |
| L713 | 23238562 | Coil, Peaking, TRF4109AJ |
| L714 | 23238562 | Coil, Peaking, TRF4109AJ |
| L719 | 23232878 | Coil, Variable, TRF3503K |
| L720 | 23289102 | Coil, Peaking, TRF4102AJ |
| L721 | 23237805 | Coil, Peaking |
| L722 | 23289102 | Coil, Peaking, TRF4102AJ |
| L723 | 23237805 | Coil, Peaking |
| L724 | 23289102 | Coil, Peaking, TRF4102AJ |
| L725 | 23237805 | Coil, Peaking |
| L726 | 23289102 | Coil, Peaking, TRF4102AJ |
| L727 | 23237805 | Coil, Peaking |
| L728 | 23289102 | Coil, Peaking, TRF4102AJ |
| L729 | 23237805 | Coil, Peaking |

| Location No. | Part No. | Description |
|--------------|----------|-------------------------------|
| L730 | 23289102 | Coil, Peaking, TRF4102AJ |
| L731 | 23237805 | Coil, Peaking |
| L737 | 23289560 | Coil, Peaking, TRF4560 |
| L738 | 23289560 | Coil, Peaking, TRF4560 |
| L739 | 23289560 | Coil, Peaking, TRF4560 |
| L740 | 23289560 | Coil, Peaking, TRF4560 |
| L742 | 23103866 | Chip (Ferrite Bead), TEM2105T |
| L743 | 23103866 | Chip (Ferrite Bead), TEM2105T |
| L744 | 23103866 | Chip (Ferrite Bead), TEM2105T |
| L745 | 23103866 | Chip (Ferrite Bead), TEM2105T |
| L746 | 23103866 | Chip (Ferrite Bead), TEM2105T |
| L747 | 23103866 | Chip (Ferrite Bead), TEM2105T |
| L748 | 23103866 | Chip (Ferrite Bead), TEM2105T |
| L749 | 23103866 | Chip (Ferrite Bead), TEM2105T |
| L811 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L812 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L813 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L814 | 23221747 | Coil, Choke, TRF9253D |
| L835 | 23221961 | Coil, Choke, TLN3017 |
| L837 | 23103941 | Coil (Ferrite Bead), TEM2000 |
| L851 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L852 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L853 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L854 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L855 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L856 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L857 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L858 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L859 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L860 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L870 | 23238711 | Coil, Peaking, TRF4180AJ |
| L883 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L885 | 23248073 | Coil, Choke, TLN3299D |
| L886 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L889 | 23248087 | Coil, Choke, TLN3312D |
| L891 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L896 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L911 | 23237987 | Coil, Peaking, TRF4100AC |
| L961 | 23237987 | Coil, Peaking, TRF4100AC |
| L962 | 23237991 | Coil, Peaking, TRF4479AC |
| L7701 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L7702 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L7703 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L7704 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L7705 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L7706 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L7707 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| L7708 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| LA01 | 23289100 | Coil, Peaking, TRF4100AF |
| LB01 | 23262996 | Coil, IF, TRF1169D |
| LQ01 | 23238709 | Coil, Peaking, TRF4270AJ |
| LQ02 | 23238718 | Coil, Peaking, TRF44R7AJ |
| LQ03 | 23238718 | Coil, Peaking, TRF44R7AJ |
| LQ04 | 23238718 | Coil, Peaking, TRF44R7AJ |
| LT01 | 23289339 | Coil, Peaking, TRF43R3AF |
| LT02 | 23238562 | Coil, Peaking, TRF4109AJ |
| LT03 | 23289150 | Coil, Peaking, TRF4150AJ |
| LT04 | 23238714 | Coil, Peaking, TRF4100AJ |
| LT05 | 23238714 | Coil, Peaking, TRF4100AJ |
| LT06 | 23238714 | Coil, Peaking, TRF4100AJ |
| LT07 | 23238714 | Coil, Peaking, TRF4100AJ |
| LT08 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| LT09 | 23238714 | Coil, Peaking, TRF4100AJ |
| LT10 | 23238506 | Coil, Peaking, TRF4229AJ |

| Location No. | Part No. | Description |
|-----------------------|----------|------------------------------------|
| LT11 | 23238714 | Coil, Peaking, TRF4100AJ |
| LT12 | 23238506 | Coil, Peaking, TRF4229AJ |
| LT13 | 23238506 | Coil, Peaking, TRF4229AJ |
| LV01 | 23103819 | Coil, Choke, TEM2015 |
| LV02 | 23103819 | Coil, Choke, TEM2015 |
| LV40 | 23238709 | Coil, Peaking, TRF4270AJ |
| LV41 | 23289270 | Coil, Peaking, TRF4270AF |
| LV44 | 23238705 | Coil, Peaking, TRF4560AJ |
| LV45 | 23289150 | Coil, Peaking, TRF4150AF |
| LV47(UV01) | 23289100 | Coil, Peaking, TRF4100AF |
| LV47(U027) | 23238705 | Coil, Peaking, TRF4560AJ |
| LV48 | 23289100 | Coil, Peaking, TRF4100AF |
| LV49 | 23289100 | Coil, Peaking, TRF4100AF |
| LV50 | 23237983 | Coil, Peaking, TRF4220AC |
| LW02 | 23261974 | Coil, Choke, HC5-035 |
| LW04 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| LW05 | 23103859 | Coil (Ferrite Bead), TEM2011 |
| LY01 | 23289100 | Coil, Peaking, TRF4100AF |
| LZ01 | 23238712 | Coil, Peaking, TRF4150AJ |
| LZ02 | 23238716 | Coil, Peaking, TRF4689AJ |
| LZ03 | 23238716 | Coil, Peaking, TRF4689AJ |
| LZ04 | 23238709 | Coil, Peaking, TRF4270AJ |
| LZ05 | 23238716 | Coil, Peaking, TRF4689AJ |
| LZ06 | 23238709 | Coil, Peaking, TRF4270AJ |
| LZ07 | 23238709 | Coil, Peaking, TRF4270AJ |
| LZ08 | 23238707 | Coil, Peaking, TRF4390AJ |
| LZ09 | 70131060 | Filter, ZBF253D-00 |
| LZ10 | 70131060 | Filter, ZBF253D-00 |
| LZ11 | 23238709 | Coil, Peaking, TRF4270AJ |
| △T400 | 23224346 | Transformer, Focus, TLN2168 |
| △T401 | 23224336 | Transformer, Horiz. Drive, TLN1083 |
| △T461Z | 23236508 | Transformer, Flyback, TFB3078ZD |
| △T461A | 23192917 | Cable, Anode |
| △T461B | 23960136 | Silicon, TSE3843W |
| △T801 | 23211683 | Line Filter, TRF3209AK |
| △T802 | 23211683 | Line Filter, TRF3209AK |
| △T803 | 23211666 | Line Filter, TRF3197 |
| △T804 | 23211002 | Line Filter, TRF3173 |
| △T805 | 23211666 | Line Filter, TRF3197 |
| △T806 | 23211666 | Line Filter, TRF3197 |
| △T862 | 23217325 | Transformer, Converter, TPW3345AM |
| △T863 | 23217326 | Transformer, Converter, TPW3346AM |
| SEMICONDUCTORS | | |
| Q201 | 23114528 | Transistor, 2SC1740S-Q |
| Q202 | 23114528 | Transistor, 2SC1740S-Q |
| Q203 | A6734590 | Transistor, 2SC752(G)TM-Y |
| Q204 | 23114528 | Transistor, 2SC1740S-Q |
| Q301 | 23319787 | IC, LA7833S |
| Q302 | B0384683 | IC, TA8859AP |
| Q321 | A6342206 | Transistor, 2SC2878-A(TE |
| Q322 | A6342206 | Transistor, 2SC2878-A(TE |
| Q340 | A6317440 | Transistor, 2SC1815-Y |
| Q341 | A6534053 | Transistor, 2SA1015-Y(TE |
| Q350 | A6317440 | Transistor, 2SC1815-Y |
| Q351 | A6534053 | Transistor, 2SA1015-Y(TE |
| Q352 | A6002030 | Transistor, RN1203 |
| Q353 | A6002030 | Transistor, RN1203 |
| Q370 | 23114530 | Transistor, 2SA933S-Q |
| Q402 | A678971D | Transistor, 2SC1569 FA-5 |

| Location No. | Part No. | Description |
|--------------|----------|--|
| △ Q404 | A6872801 | Transistor, 2SD2253(FA) |
| Q420 | 23314141 | Transistor, 2SC3852 |
| Q421 | 23114528 | Transistor, 2SC1740S-Q |
| Q430 | 23314141 | Transistor, 2SC3852 |
| Q460 | 23314850 | Transistor, 2SA1788-E |
| Q461 | A6317440 | Transistor, 2SC1815-Y |
| Q462 | A6317440 | Transistor, 2SC1815-Y |
| Q463 | 23114528 | Transistor, 2SC1740S-Q |
| Q464 | A6534053 | Transistor, 2SA1015-Y(TE) |
| Q470 | 23114528 | Transistor, 2SC1740S-Q |
| △ Q480 | 23314246 | Transistor, 2SC2023 LF-4 |
| Q483 | B0350510 | IC, TA75458S |
| Q487 | A6317440 | Transistor, 2SC1815-Y |
| Q488 | A6002040 | Transistor, RN1204 |
| Q489 | A6012020 | Transistor, RN2202 |
| Q501 | B0385673 | IC, TA1222AN |
| Q502 | 23114528 | Transistor, 2SC1740S-Q |
| Q503 | 23114528 | Transistor, 2SC1740S-Q |
| Q510 | 23114528 | Transistor, 2SC1740S-Q |
| Q601 | 23318413 | IC, LA4282 |
| Q612 | 23114530 | Transistor, 2SA933S-Q |
| Q681 | A6342206 | Transistor, 2SC2878-A(TE) |
| Q682 | A6342206 | Transistor, 2SC2878-A(TE) |
| Q701 | B0588212 | IC, T7K64 |
| Q703 | 23905014 | IC, LC78816M |
| Q704 | 23905014 | IC, LC78816M |
| Q705 | 23905014 | IC, LC78816M |
| Q707 | B0379550 | IC, TA8667P |
| Q709 | A6734590 | Transistor, 2SC752(G)TM-Y |
| Q710 | 23314204 | Transistor, 2SC2412K,Q |
| Q711 | 70119743 | IC, PST523D |
| Q713 | 23905012 | IC, CAT24C16 |
| Q715 | 23319808 | IC, M5218AP |
| Q717 | 23319808 | IC, M5218AP |
| Q719 | 23319808 | IC, M5218AP |
| △ Q751 | 23905094 | IC, STK392-110 |
| △ Q752 | 23905094 | IC, STK392-110 |
| Q754 | 23319199 | IC, MC7805CT |
| Q755 | 23904844 | IC, MCT7809BT |
| Q756 | 23318841 | IC, AN79M09F |
| Q757 | 23114528 | Transistor, 2SC1740S-Q |
| Q758 | 23114528 | Transistor, 2SC1740S-Q |
| Q759 | 23114530 | Transistor, 2SA933S-Q |
| Q761 | 23114530 | Transistor, 2SA933S-Q |
| Q762 | 23114528 | Transistor, 2SC1740S-Q |
| Q764 | B0487575 | IC, TC74HC4050AP |
| Q765 | 23114528 | Transistor, 2SC1740S-Q |
| Q766 | 23114528 | Transistor, 2SC1740S-Q |
| Q767 | B0470662 | IC, TC4066BP |
| Q768 | 23114530 | Transistor, 2SA933S-Q |
| Q769 | 23114528 | Transistor, 2SC1740S-Q |
| Q770 | 23114530 | Transistor, 2SA933S-Q |
| Q771 | A6533730 | Transistor, 2SA1012-Y |
| Q780 | 23114530 | Transistor, 2SA933S-Q |
| Q781 | 23114528 | Transistor, 2SC1740S-Q |
| Q782 | 23114528 | Transistor, 2SC1740S-Q |
| △ Q801 | 23905084 | IC, STR-S6709 |
| Q802 | 23314141 | Transistor, 2SC3852 |
| △ Q803 | 23904247 | IC, STR-S6708 |
| Q804 | 23314141 | Transistor, 2SC3852 |
| Q826 | A8643108 | Photo Coupler, TLP621(GR-LF) |
| Q826 | 23904429 | Photo Coupler, TLP721F(D4GR (48PJ5UE)) |
| △ Q828 | A8643106 | Photo Coupler, TLP621(GR) |

| Location No. | Part No. | Description |
|--------------|----------|--|
| Q828 | 23904429 | Photo Coupler, TLP721F(D4GR (48PJ5UE)) |
| Q829 | A6534053 | Transistor, 2SA1015-Y(TE) |
| Q831 | 23904841 | IC, MCT7805BT |
| Q832 | 23904274 | IC, PQ09RF11 |
| Q835 | 23319941 | IC, SI-3050C |
| Q836 | A6317440 | Transistor, 2SC1815-Y |
| Q837 | A6317440 | Transistor, 2SC1815-Y |
| Q845 | A6002050 | Transistor, RN1205 |
| Q846 | A6317440 | Transistor, 2SC1815-Y |
| Q850(U401) | A6534053 | Transistor, 2SA1015-Y(TE) |
| Q850(U801) | A6317440 | Transistor, 2SC1815-Y |
| Q851 | 23905251 | IC, SE024N |
| Q852 | 23318299 | IC, L78MR05 |
| Q855 | 23114528 | Transistor, 2SC1740S-Q |
| Q857 | A6317440 | Transistor, 2SC1815-Y |
| Q858 | A6002050 | Transistor, RN1205 |
| Q859 | A6317440 | Transistor, 2SC1815-Y |
| Q860 | A6000050 | Transistor, RN1005 |
| Q901 | 23314811 | Transistor, 2SC5147 |
| Q902 | A6734590 | Transistor, 2SC752(G)TM-Y |
| Q911 | 23314811 | Transistor, 2SC5147 |
| Q912 | A6509154 | Transistor, 2SA562TM-Y(T) |
| Q913 | A6734590 | Transistor, 2SC752(G)TM-Y |
| Q914 | A6321265 | Transistor, 2SC2120-Y(TE) |
| Q921 | 23314811 | Transistor, 2SC5147 |
| Q922 | A6734590 | Transistor, 2SC752(G)TM-Y |
| Q923 | A6734590 | Transistor, 2SC752(G)TM-Y |
| Q961 | 23114528 | Transistor, 2SC1740S-Q |
| Q962 | A6509154 | Transistor, 2SA562TM-Y |
| Q963 | A6317440 | Transistor, 2SC1815-Y |
| Q964 | A6534053 | Transistor, 2SA1015-Y |
| Q965 | A6317440 | Transistor, 2SC1815-Y |
| Q966 | A6534053 | Transistor, 2SA1015-Y |
| QA01 | 23905243 | IC, 87CP38N-3230 |
| QA02 | 23904666 | IC, NM24C08EN |
| QB01 | 23114528 | Transistor, 2SC1740S-Q |
| QB02 | 23114530 | Transistor, 2SA933S-Q |
| QB03 | A6002050 | Transistor, RN1205 |
| QB30 | 23114528 | Transistor, 2SC1740S-Q |
| QB61 | A6002040 | Transistor, RN1204 |
| QB62 | A6002040 | Transistor, RN1204 |
| QB63 | A6012030 | Transistor, RN2203 |
| QB64 | 23114528 | Transistor, 2SC1740S-Q |
| QB65 | 23114528 | Transistor, 2SC1740S-Q |
| QB66 | A6002040 | Transistor, RN1204 |
| QB67 | A6734590 | Transistor, 2SC752(G)TM-Y |
| QB90 | 23904921 | IC, JLC1563P |
| QB91 | 23904659 | IC, UPD74HC32C |
| QD80 | 23114530 | Transistor, 2SA933S-Q |
| QG01 | B0385640 | IC, TA1216N |
| QQ01 | B0385755 | IC, TA1229N |
| QQ02 | B0383881 | IC, TA8772AN |
| QQ03 | 23114528 | Transistor, 2SC1740S-Q |
| QQ04 | 23114528 | Transistor, 2SC1740S-Q |
| QR01 | B0487584 | IC, TC74HC4053AP |
| QR04 | A6534053 | Transistor, 2SA1015-Y(TE) |
| QR05 | A6534053 | Transistor, 2SA1015-Y(TE) |
| QR06 | A6534053 | Transistor, 2SA1015-Y(TE) |
| QR15 | A6534053 | Transistor, 2SA1015-Y(TE) |
| QR17 | A6317440 | Transistor, 2SC1815-Y |
| QR18 | A6734590 | Transistor, 2SC752(G)TM-Y |
| QR19 | A6734590 | Transistor, 2SC752(G)TM-Y |
| QR20 | 23114530 | Transistor, 2SA933S-Q |

| Location No. | Part No. | Description |
|--------------|----------|---------------------------|
| QR21 | A6317440 | Transistor, 2SC1815-Y |
| QR22 | A6317440 | Transistor, 2SC1815-Y |
| QS01 | A6342206 | Transistor, 2SC2878-A(TE |
| QS02 | A6342206 | Transistor, 2SC2878-A(TE |
| QS03 | A6010040 | Transistor, RN2004 |
| QS04 | 23114528 | Transistor, 2SC1740S-Q |
| QS05 | 23114528 | Transistor, 2SC1740S-Q |
| QS601 | 23114528 | Transistor, 2SC1740S-Q |
| QS602 | 23114528 | Transistor, 2SC1740S-Q |
| QS603 | A6342206 | Transistor, 2SC2878-A(TE |
| QS604 | A6342206 | Transistor, 2SC2878-A(TE |
| QS605 | A6010040 | Transistor, RN2004 |
| QT01 | 23904899 | IC, SAA5281ZP/E |
| QT02 | A6317440 | Transistor, 2SC1815-Y |
| QT03 | A6317440 | Transistor, 2SC1815-Y |
| QT04 | A6534053 | Transistor, 2SA1015-Y(TE |
| QT05 | A6317440 | Transistor, 2SC1815-Y |
| QT06 | A6534053 | Transistor, 2SA1015-Y(TE |
| QV01 | B0385650 | IC, TA1218N |
| QV04 | 23114528 | Transistor, 2SC1740S-Q |
| QV05 | A6002030 | Transistor, RN1203 |
| QV10 | 23114528 | Transistor, 2SC1740S-Q |
| QV13 | 23114528 | Transistor, 2SC1740S-Q |
| QV40 | 23114528 | Transistor, 2SC1740S-Q |
| QV41 | 23114528 | Transistor, 2SC1740S-Q |
| QV42 | 23114530 | Transistor, 2SA933S-Q |
| QV43 | A6534053 | Transistor, 2SA1015-Y(TE |
| QV44 | 23114528 | Transistor, 2SC1740S-Q |
| QV45 | 23114528 | Transistor, 2SC1740S-Q |
| QV46 | 23114530 | Transistor, 2SA933S-Q |
| QV47 | A6534053 | Transistor, 2SA1015-Y(TE |
| QV49 | 23114528 | Transistor, 2SC1740S-Q |
| QV50 | A6534053 | Transistor, 2SA1015-Y(TE |
| QV51 | 23114528 | Transistor, 2SC1740S-Q |
| QV52 | A6342206 | Transistor, 2SC2878-A(TE |
| QW05 | A6317440 | Transistor, 2SC1815-Y |
| QW06 | A6317440 | Transistor, 2SC1815-Y |
| QW07 | A6734590 | Transistor, 2SC752(G)TM-Y |
| QW09 | 23114528 | Transistor, 2SC1740S-Q |
| QW10 | 23114530 | Transistor, 2SA933S-Q |
| QW11 | 23314701 | Transistor, 2SA1186A |
| QW12 | 23314705 | Transistor, 2SD1763A |
| QW19 | A6317440 | Transistor, 2SC1815-Y |
| QW20 | A6317440 | Transistor, 2SC1815-Y |
| QY60(U901) | 23318255 | IC, UPC1406HA |
| QY60(U901) | 23319251 | IC, MC1458P1 |
| QY604 | A6342206 | Transistor, 2SC2878-A(TE |
| QY605 | 23114530 | Transistor, 2SA933S-Q |
| QY606 | A6010040 | Transistor, RN2004 |
| OZ01 | B0410687 | IC, TC9090N |
| OZ02 | 23319504 | IC, MM1031XS |
| OZ03 | 23114528 | Transistor, 2SC1740S-Q |
| OZ04 | 23114528 | Transistor, 2SC1740S-Q |
| OZ05 | 23114528 | Transistor, 2SC1740S-Q |
| OZ06 | 23114528 | Transistor, 2SC1740S-Q |
| D101 | 23316411 | Diode, 1SS184 |
| D201 | 23115537 | Diode, 1SS131 |
| D215 | 23115537 | Diode, 1SS131 |
| D216 | 23115537 | Diode, 1SS131 |
| D217 | 23115537 | Diode, 1SS131 |
| D218 | 23115537 | Diode, 1SS131 |
| D219 | 23115537 | Diode, 1SS131 |
| D220 | 23115537 | Diode, 1SS131 |
| D221 | 23316687 | Diode, Zener, MTZJ9.1B |

| Location No. | Part No. | Description |
|--------------|----------|--------------------------|
| D301 | 23118094 | Diode, EU2A |
| D302 | 23118094 | Diode, EU2A |
| D303 | 23115537 | Diode, 1SS131 |
| D308 | 23118822 | Diode, ERB12-02 |
| D309 | 23118822 | Diode, ERB12-02 |
| D312 | 23115537 | Diode, 1SS131 |
| D315 | 23115537 | Diode, 1SS131 |
| D321 | 23316658 | Diode, Zener, MTZJ3.6A |
| D332 | 23316794 | Diode, SC570A |
| D340 | 23115537 | Diode, 1SS131 |
| D341 | 23316675 | Diode, Zener, MTZJ6.2B |
| D350 | 23115537 | Diode, 1SS131 |
| D351 | 23115537 | Diode, 1SS131 |
| D352 | 23115537 | Diode, 1SS131 |
| D353 | 23316672 | Diode, Zener, MTZJ5.6B |
| D354 | 23115537 | Diode, 1SS131 |
| D370 | 23316672 | Diode, Zener, MTZJ5.6B |
| D406 | A7978850 | Diode, S5295G |
| D408 | A7580658 | Diode, 3JH41 |
| D427 | 23316680 | Diode, Zener, MTZJ7.5A |
| D430(U401) | 23316329 | Diode, Zener, UZ11BSA |
| D430(U401) | 23316715 | Diode, Zener, MTZJ11A |
| D431 | 23115537 | Diode, 1SS131 |
| D432 | 23316670 | Diode, Zener, MTZJ5.1C |
| D441 | 23316726 | Diode, Zener, MTZJ15C |
| D442 | A7568200 | Diode, 1S1832 |
| D443 | 23118338 | Diode, RU4AM |
| D444 | 23118338 | Diode, RU4AM |
| D458 | 23115774 | Diode, Zener, RD6.2E(4) |
| D459 | 23115537 | Diode, 1SS131 |
| D460 | A7568480 | Diode, TVR-1G |
| D461 | 23316582 | Diode, ERC20-06 |
| D463 | 23115537 | Diode, 1SS131 |
| D464 | 23316673 | Diode, Zener, MTZJ5.6C |
| D465 | 23316672 | Diode, Zener, MTZJ5.6B |
| D466 | 23316672 | Diode, Zener, MTZJ5.6B |
| D467 | A7568752 | Diode, 1S1887A |
| D468 | 23316782 | Diode, Zener, MTZJ6.2C |
| D470 | 23115537 | Diode, 1SS131 |
| D471 | A7568460 | Diode, TVR-1B |
| D474 | 23118511 | Diode, Zener, RD12ESA B2 |
| D482 | 23118094 | Diode, EU2A |
| D486 | 23316742 | Diode, Zener, MTZJ24B |
| D487 | 23118094 | Diode, EU2A |
| D488 | 23118859 | Diode, 1SS133 |
| D489 | 23316659 | Diode, Zener, MTZJ3.6B |
| D601 | 23115537 | Diode, 1SS131 |
| D602 | 23115537 | Diode, 1SS131 |
| D603 | 23115537 | Diode, 1SS131 |
| D604 | 23115537 | Diode, 1SS131 |
| D605 | 23115537 | Diode, 1SS131 |
| D606 | 23115537 | Diode, 1SS131 |
| D611 | 23115537 | Diode, 1SS131 |
| D612 | 23115537 | Diode, 1SS131 |
| D613 | 23115537 | Diode, 1SS131 |
| D614 | 23115537 | Diode, 1SS131 |
| D701 | 23115537 | Diode, 1SS131 |
| D702 | 23115537 | Diode, 1SS131 |
| D703 | 23115537 | Diode, 1SS131 |
| D704 | 23115537 | Diode, 1SS131 |
| △D801 | 23316784 | Diode, RBV-1506 |
| D803 | 23118094 | Diode, EU2A |
| D804 | 23316315 | Diode, Zener, UZ6.8BSB |
| D805 | A7150258 | Diode, 1SS176 |

| Location No. | Part No. | Description |
|--------------|----------|------------------------|
| D806 | 23118094 | Diode, EU2A |
| D808 | 23118094 | Diode, EU2A |
| D809 | A7270200 | Diode, Zener, 1Z6.2 |
| D810 | 23118859 | Diode, 1SS133 |
| D811 | A7150258 | Diode, 1SS176 |
| D812 | 23118451 | Diode, RU-4A |
| D815 | 23316339 | Diode, Zener, UZ15BSB |
| D816 | A7150258 | Diode, 1SS176 |
| D817 | 23316365 | Diode, UZ30BSD |
| D820 | A7150258 | Diode, 1SS176 |
| D828 | A7150258 | Diode, 1SS176 |
| D835 | A7150258 | Diode, 1SS176 |
| D837 | 23316309 | Diode, Zener, UZ5.6BSB |
| D850 | 23118173 | Diode, RBV-406M-LFA |
| D852 | 23118094 | Diode, EU2A |
| D853 | 23118094 | Diode, EU2A |
| D854 | 23316309 | Diode, Zener, UZ5.6BSB |
| D855 | 23316339 | Diode, Zener, UZ15BSB |
| D856 | 23118094 | Diode, EU2A |
| D857 | 23118859 | Diode, 1SS133 |
| D858 | 23118094 | Diode, EU2A |
| D859 | 23316315 | Diode, Zener, UZ6.8BSB |
| D860 | 23118859 | Diode, 1SS133 |
| D861 | 23316744 | Diode, Zener, MTZJ24D |
| D862 | 23115537 | Diode, 1SS131 |
| D863 | 23118094 | Diode, EU2A |
| D864 | 23316475 | Diode, FMP-G12S |
| D865 | 23316475 | Diode, FMP-G12S |
| D867 | 23118094 | Diode, EU2A |
| D868 | 23316475 | Diode, FMP-G12S |
| D869 | A7150258 | Diode, 1SS176 |
| D870 | 23118859 | Diode, 1SS133 |
| D871 | 23118859 | Diode, 1SS133 |
| D872 | 23316675 | Diode, Zener, MTZJ6.2B |
| D873 | 23316315 | Diode, Zener, UZ6.8BSB |
| D874 | A7150258 | Diode, 1SS176 |
| D875 | 23316760 | Diode, Zener, MTZJ36D |
| D876 | 23115537 | Diode, 1SS131 |
| D877 | A7150258 | Diode, 1SS176 |
| D883 | 23316406 | Diode, FML-G16S |
| D885 | 23316184 | Diode, FML-G12S |
| D891 | 23316184 | Diode, FML-G12S |
| D896 | 23316825 | Diode, EU2YX |
| △ D899 | 24000656 | Varistor, 470V |
| D901 | 23115537 | Diode, 1SS131 |
| D902 | 23115537 | Diode, 1SS131 |
| D903 | 23115537 | Diode, 1SS131 |
| D904 | 23115537 | Diode, 1SS131 |
| D911 | 23115537 | Diode, 1SS131 |
| D912 | 23115537 | Diode, 1SS131 |
| D913 | 23115537 | Diode, 1SS131 |
| D914 | 23115537 | Diode, 1SS131 |
| D915 | 23115537 | Diode, 1SS131 |
| D916 | 23115537 | Diode, 1SS131 |
| D917 | 23115537 | Diode, 1SS131 |
| D918 | 23115537 | Diode, 1SS131 |
| D921 | 23115537 | Diode, 1SS131 |
| D922 | 23115537 | Diode, 1SS131 |
| D923 | 23115537 | Diode, 1SS131 |
| D924 | 23115537 | Diode, 1SS131 |
| D925 | 23115537 | Diode, 1SS131 |
| D926 | 23115537 | Diode, 1SS131 |
| D927 | 23115537 | Diode, 1SS131 |
| D961 | 23115537 | Diode, 1SS131 |

| Location No. | Part No. | Description |
|----------------------|----------|------------------------|
| D962 | 23115537 | Diode, 1SS131 |
| D7701 | 23115537 | Diode, 1SS131 |
| D7702 | 23115532 | Diode, ERB12-01 |
| D7705 | 23115537 | Diode, 1SS131 |
| D7706 | 23115537 | Diode, 1SS131 |
| D7707 | 23115537 | Diode, 1SS131 |
| D7708 | 23115537 | Diode, 1SS131 |
| D7709 | 23316675 | Diode, Zener, MTZJ6.2B |
| D7710 | 23316716 | Diode, Zener, MTZJ11B |
| D7711 | 23316716 | Diode, Zener, MTZJ11B |
| D7712 | 23115537 | Diode, 1SS131 |
| D7713 | 23115537 | Diode, 1SS131 |
| D7717 | 23316675 | Diode, Zener, MTZJ6.2B |
| D7718 | 23316675 | Diode, Zener, MTZJ6.2B |
| D7719 | 23316675 | Diode, Zener, MTZJ6.2B |
| D7720 | 23316675 | Diode, Zener, MTZJ6.2B |
| D7721 | 23316675 | Diode, Zener, MTZJ6.2B |
| D7722 | 23316675 | Diode, Zener, MTZJ6.2B |
| D7801 | 23115537 | Diode, 1SS131 |
| D7802 | 23115537 | Diode, 1SS131 |
| D8803 | 23115537 | Diode, 1SS131 |
| D8804 | 23115537 | Diode, 1SS131 |
| DA22 | 23115537 | Diode, 1SS131 |
| DA23 | 23115537 | Diode, 1SS131 |
| DA24 | 23115537 | Diode, 1SS131 |
| DA42 | 23316675 | Diode, Zener, MTZJ6.2B |
| DA69 | 23316675 | Diode, Zener, MTZJ6.2B |
| DB01 | 23358493 | LED, SPR54MVWFLMN |
| DB03 | 23358522 | LED, SIR-56SB3F |
| DD80 | 23115537 | Diode, 1SS131 |
| DR01 | 23316817 | Diode, 1SS120-7 |
| DV01 | 23316686 | Diode, Zener, MTZJ9.1A |
| DV02 | 23316686 | Diode, Zener, MTZJ9.1A |
| DV03 | 23316686 | Diode, Zener, MTZJ9.1A |
| DV04 | 23316686 | Diode, Zener, MTZJ9.1A |
| DV05 | 23316686 | Diode, Zener, MTZJ9.1A |
| DV06 | A7150258 | Diode, 1SS176 |
| DW04 | A7150258 | Diode, 1SS176 |
| DW05 | A7150258 | Diode, 1SS176 |
| DW06 | A7568475 | Diode, TVR-2D |
| DW07 | A7568475 | Diode, TVR-2D |
| DW20 | A7150258 | Diode, 1SS176 |
| DW21 | A7150258 | Diode, 1SS176 |
| DY601 | 23115537 | Diode, 1SS131 |
| DY602 | 23115537 | Diode, 1SS131 |
| DZ01 | 23118622 | Diode, Zener, RD10ESA |
| MISCELLANEOUS | | |
| △ F470 | 23144873 | Fuse, 1.0A |
| F470A | 23165431 | Holder, Fuse |
| F470B | 23165431 | Holder, Fuse |
| △ F801 | 23144519 | Fuse, 6.3A |
| F801A | 23165433 | Holder, Fuse |
| △ F802 | 23144832 | Fuse, 2.0A |
| F802A | 23165431 | Holder, Fuse |
| F802B | 23165431 | Holder, Fuse |
| △ F803 | 23144832 | Fuse, 2.0A |
| F803A | 23165431 | Holder, Fuse |
| F803B | 23165431 | Holder, Fuse |
| △ F804 | 23144832 | Fuse, 2.0A |
| F804A | 23165431 | Holder, Fuse |
| F804B | 23165431 | Holder, Fuse |
| △ F805 | 23144867 | Fuse, 4.0A |
| F805A | 23165431 | Holder, Fuse |

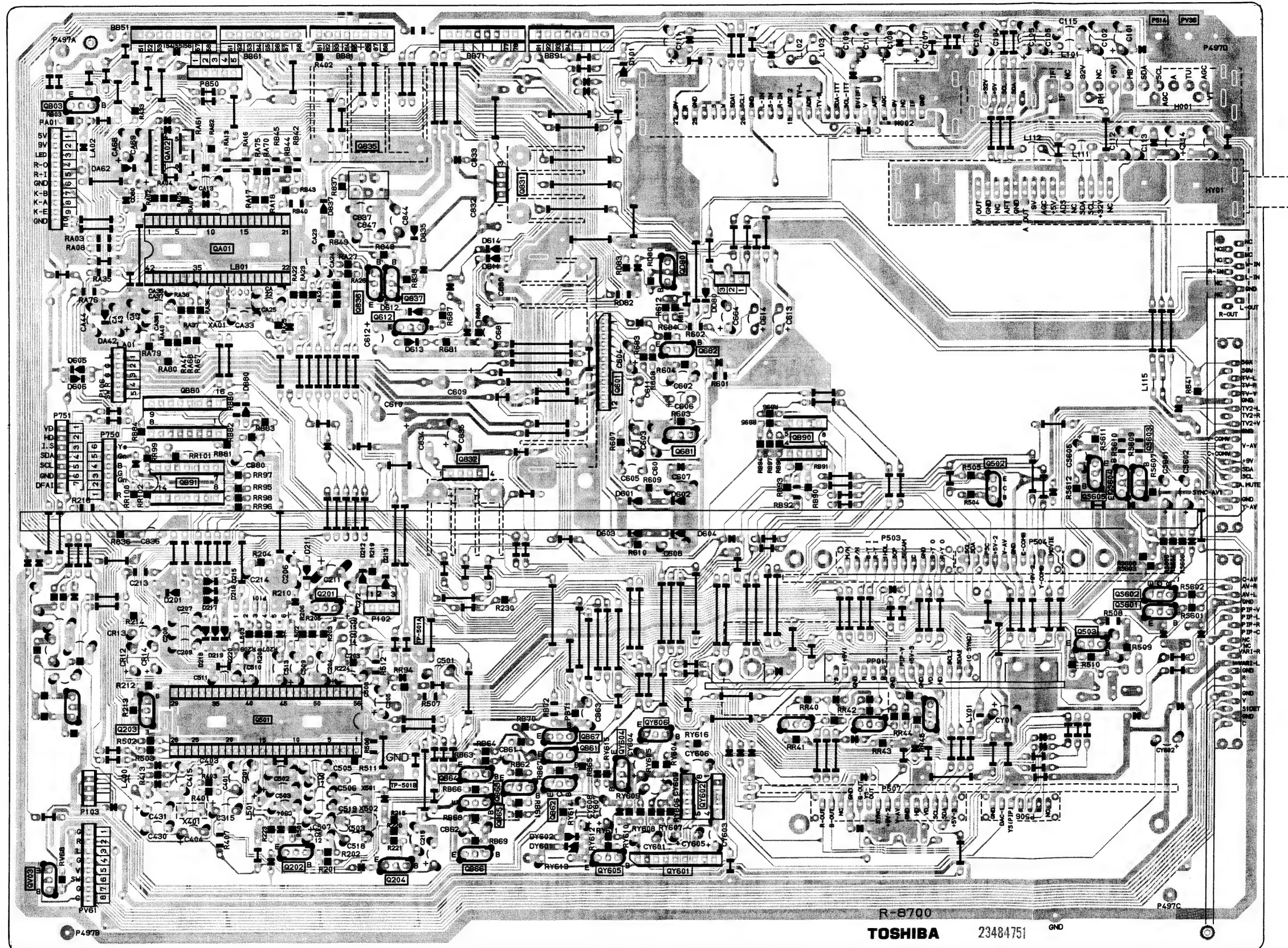
| Location No. | Part No. | Description |
|--------------|----------|-------------------------------------|
| F805B | 23165431 | Holder, Fuse |
| G101 | 23238562 | Coil, Peaking, TRF4109AJ |
| GR01 | 24366561 | CF, 560 ohm |
| H002 | 23148231 | Module, IF MPX, MVCS43 (48PJ5UE) |
| H002 | 23148244 | Module, IF MPX, MVCS43B (48PJ5UH) |
| H002 | 23148242 | Module, IF MPX, MVCS43A (48PJ5UC) |
| H003 | 23123919 | Divider, Antenna, DAE123B |
| H003A | 23740989 | Nut, F-Connector |
| KB01 | 23904946 | Remote Sensor, RPM-676CBR-S |
| P661 | 23365444 | Jack, Earphone |
| △P801 | 23176897 | Power Cord (48PJ5UH) |
| △P801 | 23176892 | Power Cord (48PJ5UE) |
| △P801 | 23176888 | Power Cord (48PJ5UC) |
| PV01 | 23365858 | Jack, 2S9P |
| PV02 | 23365859 | Jack, 0S5P |
| PV40 | 23365857 | Jack, 1S3P |
| PY630 | 23365444 | Jack, Earphone |
| △S801 | 23145434 | Switch, Power, 2C2P |
| SA01 | 23145226 | Switch, Push, 1C1P |
| SA02 | 23145226 | Switch, Push, 1C1P |
| SA03 | 23145226 | Switch, Push, 1C1P |
| SA04 | 23145226 | Switch, Push, 1C1P |
| SA06 | 23145226 | Switch, Push, 1C1P |
| SA07 | 23145226 | Switch, Push, 1C1P |
| △SR80 | 23146916 | Power Relay, DG1U-12 |
| △SR81 | 23146916 | Power Relay, DG1U-12 |
| △V901A | 23902886 | Socket, CRT, 9P |
| △V902A | 23902886 | Socket, CRT, 9P |
| △V903A | 23902886 | Socket, CRT, 9P |
| W661 | 23151232 | Speaker, SPK-1235, 160x160mm, 8 ohm |
| W662 | 23151232 | Speaker, SPK-1235, 160x160mm, 8 ohm |
| X401 | 23153721 | Ceramic Resonator, 503kHz, TCR1023 |
| X501 | 23153961 | Crystal, 3.58MHz |
| X503 | 23153979 | Crystal, 4.43MHz |
| XA01 | 23153325 | Ceramic Resonator, 8.00M, TCR1056 |
| XQ01 | 23153969 | Crystal, 4MHz |
| XT01 | 23153012 | Crystal, 27MHz |
| △Z410 | 23110834 | Focus Pack, TPA6026 |
| △Z410A | 23368609 | Cable, Focus |
| Z450 | 24082877 | CR Block, TPA5007 |
| Z702 | 23103800 | Filter, TEM2026D |
| Z703 | 23103800 | Filter, TEM2026D |
| Z704 | 23103800 | Filter, TEM2026D |
| Z705 | 23103800 | Filter, TEM2026D |
| Z706 | 23103800 | Filter, TEM2026D |
| Z707 | 23103800 | Filter, TEM2026D |
| Z711 | 23103800 | Filter, TEM2026D |
| Z712 | 23103800 | Filter, TEM2026D |
| △Z801 | 23904998 | IC, HIC1016 |
| △Z889 | 23144451 | Protector, PRF5000, 125V, 5A |
| △Z890 | 23144451 | Protector, PRF5000, 125V, 5A |
| ZV01 | 23107519 | Filter Ceramic, TCF1066 |
| ZY01 | 23148247 | Module, Multi PIP |

| Location No. | Part No. | Description |
|----------------------------|----------|---|
| PC BOARD ASSEMBLIES | | |
| * U021 | 23704824 | CRT Drive (Red) Board, PB5937-1 (48PJ5UE) |
| * U021 | 23704549 | CRT Drive (Red) Board, PB5797-1 (48PJ5UH) |
| * U021 | 23704813 | CRT Drive (Red) Board, PB5934-1 (48PJ5UC) |
| * U022 | 23704825 | CRT Drive (Green) Board, PB5937-2 (48PJ5UE) |
| * U022 | 23704550 | CRT Drive (Green) Board, PB5797-2 (48PJ5UH) |
| * U022 | 23704814 | CRT Drive (Green) Board, PB5934-2 (48PJ5UC) |
| * U023 | 23704826 | CRT Drive (Blue) Board, PB5937-3 (48PJ5UE) |
| * U023 | 23704551 | CRT Drive (Blue) Board, PB5797-3 (48PJ5UH) |
| * U023 | 23704815 | CRT Drive (Blue) Board, PB5934-3 (48PJ5UC) |
| * U024 | 23704894 | SVM Board, PB5937-4 (48PJ5UE) |
| * U024 | 23704552 | SVM Board, PB5797-4 (48PJ5UH) |
| * U024 | 23704816 | SVM Board, PB5934-4 (48PJ5UC) |
| * U025 | 23704833 | RMT IN Board, PB5937-5 (48PJ5UE) |
| * U025 | 23704553 | RMT IN Board, PB5797-5 (48PJ5UH) |
| * U025 | 23704817 | RMT IN Board, PB5934-5 (48PJ5UC) |
| * U026 | 23704834 | Front Cont Board, PB5937-6 (48PJ5UE) |
| * U026 | 23704554 | Front Cont Board, PB5797-6 (48PJ5UH) |
| * U026 | 23704818 | Front Cont Board, PB5934-6 (48PJ5UC) |
| * U027 | 23704835 | Front IN Board, PB5937-7 (48PJ5UE) |
| * U027 | 23704555 | Front IN Board, PB5797-7 (48PJ5UH) |
| * U027 | 23704819 | Front IN Board, PB5934-7 (48PJ5UC) |
| * U028 | 23704836 | AC-IN-2 Board, PB5937-8 (48PJ5UE) |
| * U028 | 23704556 | AC-IN-2 Board, PB5797-8 (48PJ5UH) |
| * U028 | 23704820 | AC-IN Board, PB5934-8 (48PJ5UC) |
| * U029 | 23704837 | DPC Board, PB5937-9 (48PJ5UE) |
| * U029 | 23704557 | DPC Board, PB5797-9 (48PJ5UH) |
| * U029 | 23704821 | DPC Board, PB5934-9 (48PJ5UC) |
| * U401 | 23704822 | DEF/POWER Board, PB5935 (48PJ5UE) |
| * U401 | 23704530 | DEF/POWER Board, PB5785 (48PJ5UH/48PJ5UC) |
| * U701 | 23704531 | D-CONVER Board, PB5786 |
| * U801 | 23704823 | CONV/POW2 Board, PB5936 (48PJ5UE) |
| * U801 | 23704540 | CONV/POW2 Board, PB5793 (48PJ5UH/48PJ5UC) |

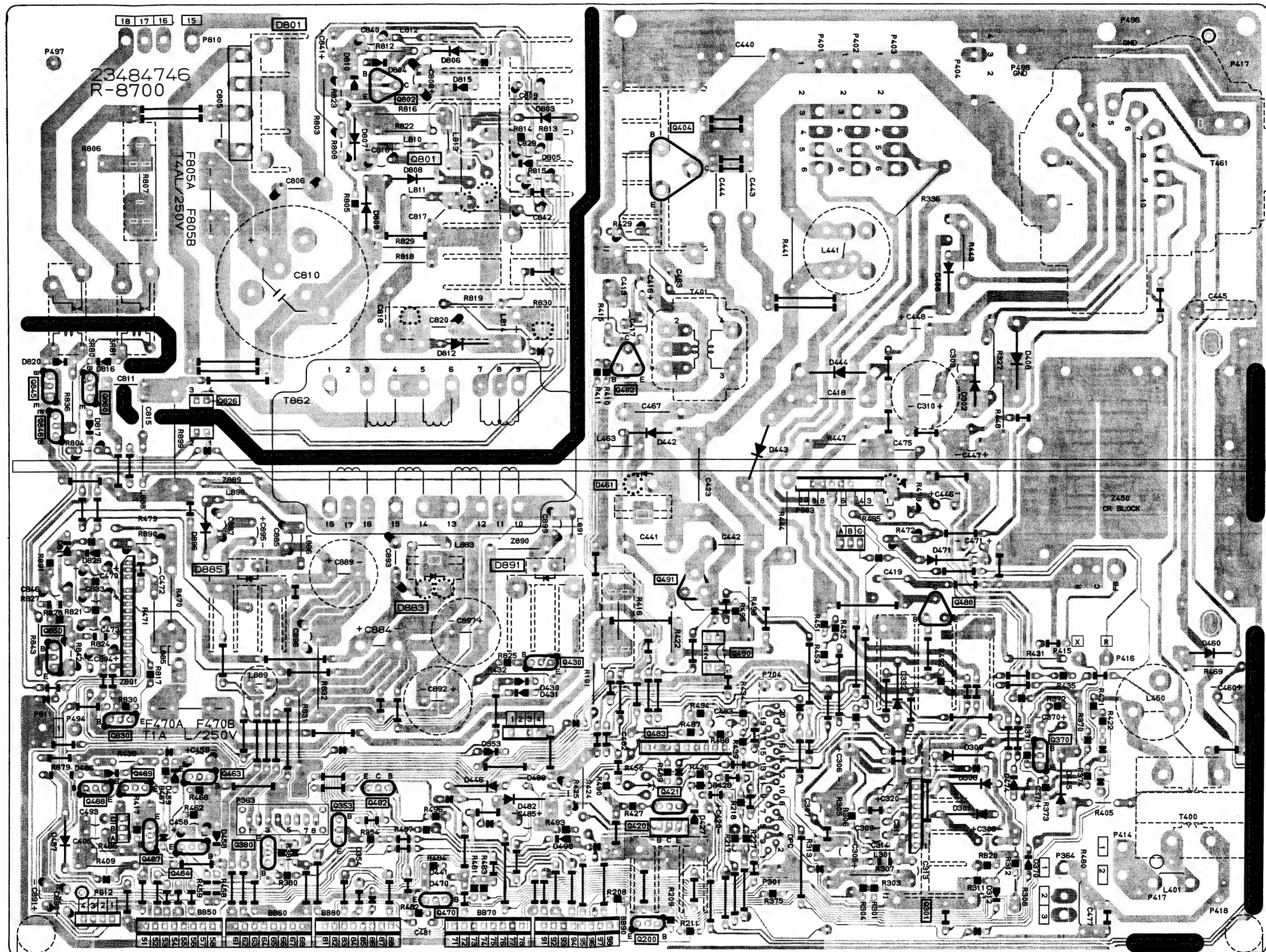
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INTENTIONALLY LEFT
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SIGNAL BOARD

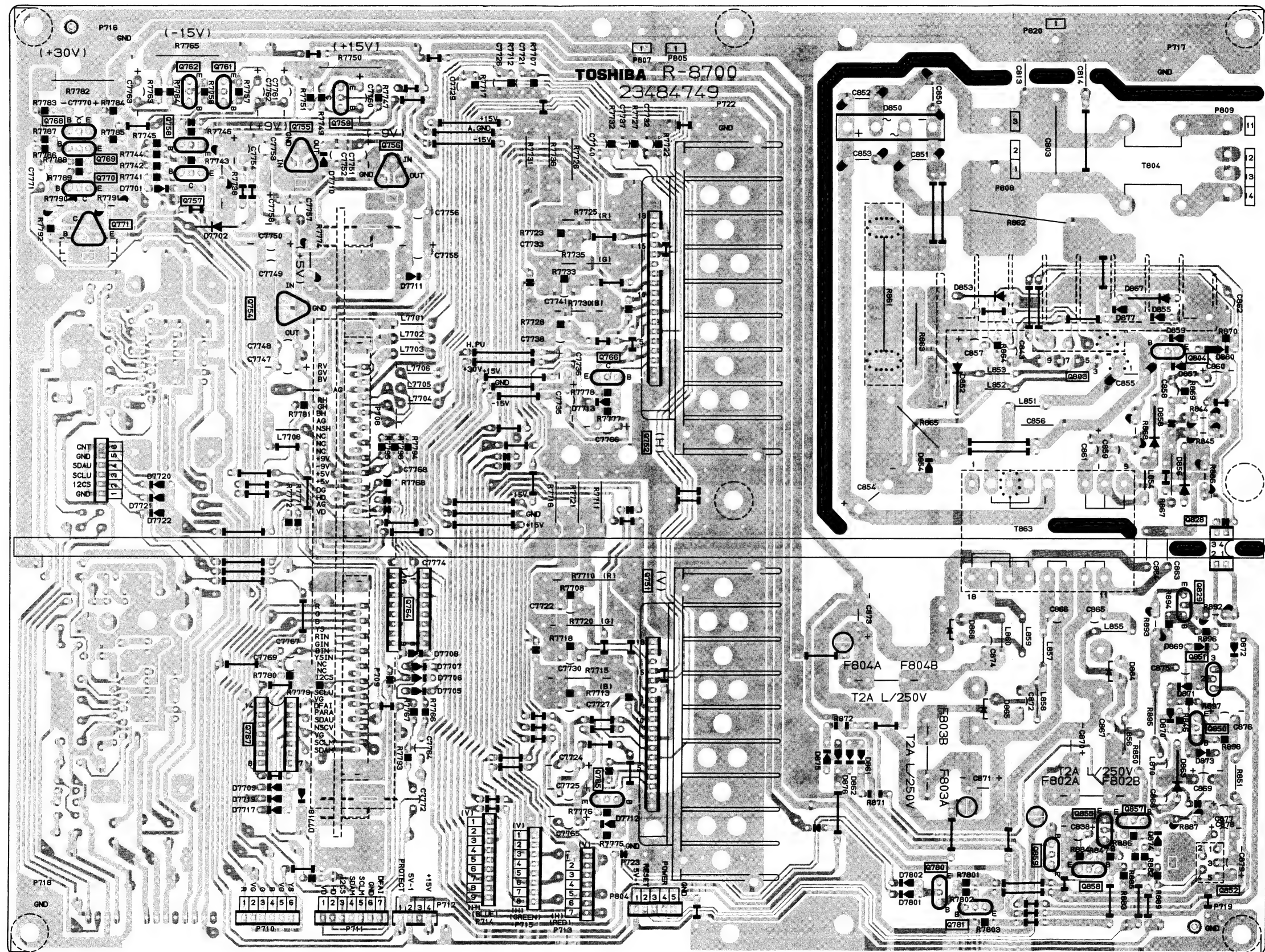
BOTTOM (FOIL) SIDE



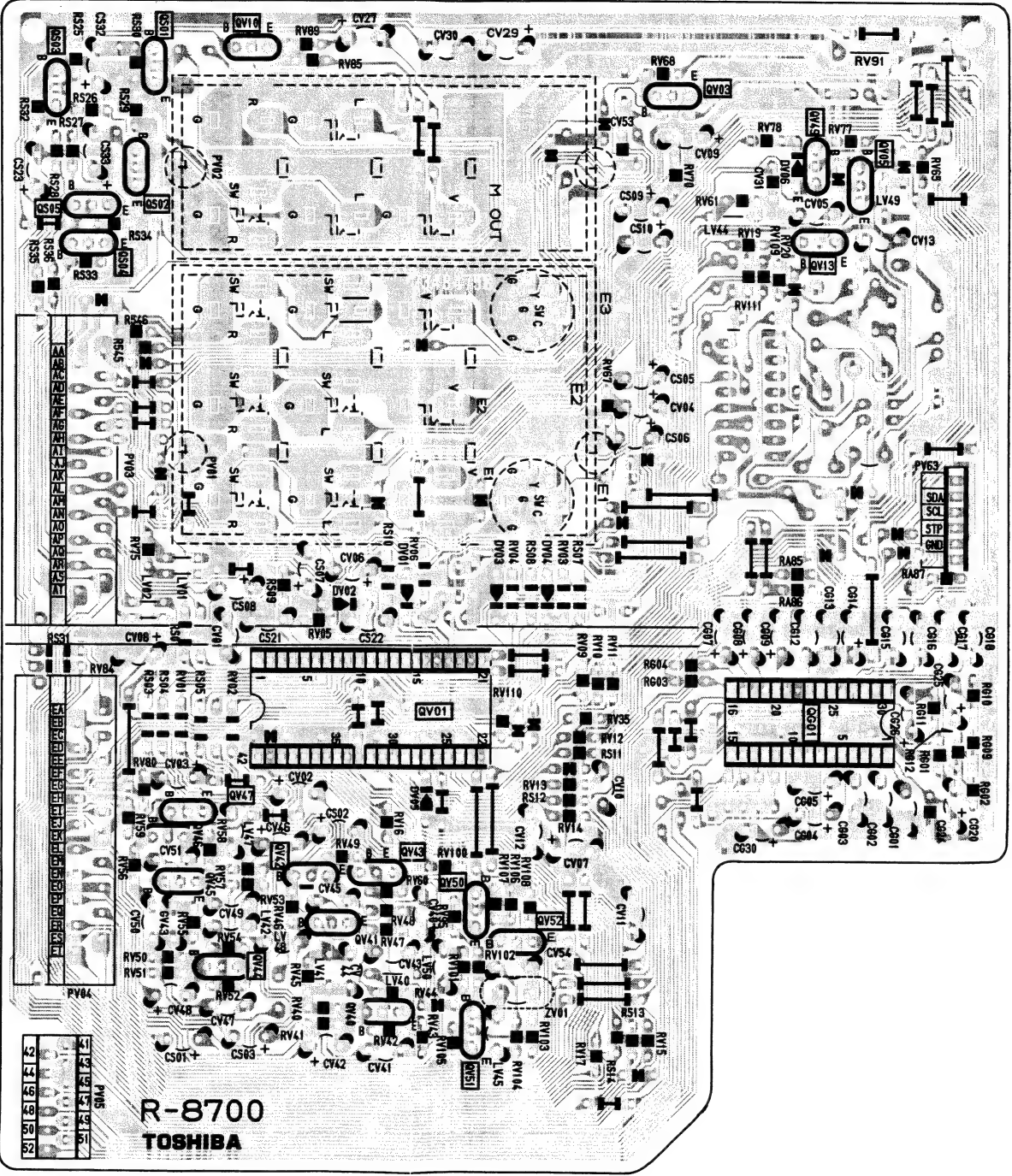
POWER/DEF BOARD
BOTTOM (FOIL) SIDE



CONV.OUT/POWER2/AMP BOARD
BOTTOM (FOIL) SIDE

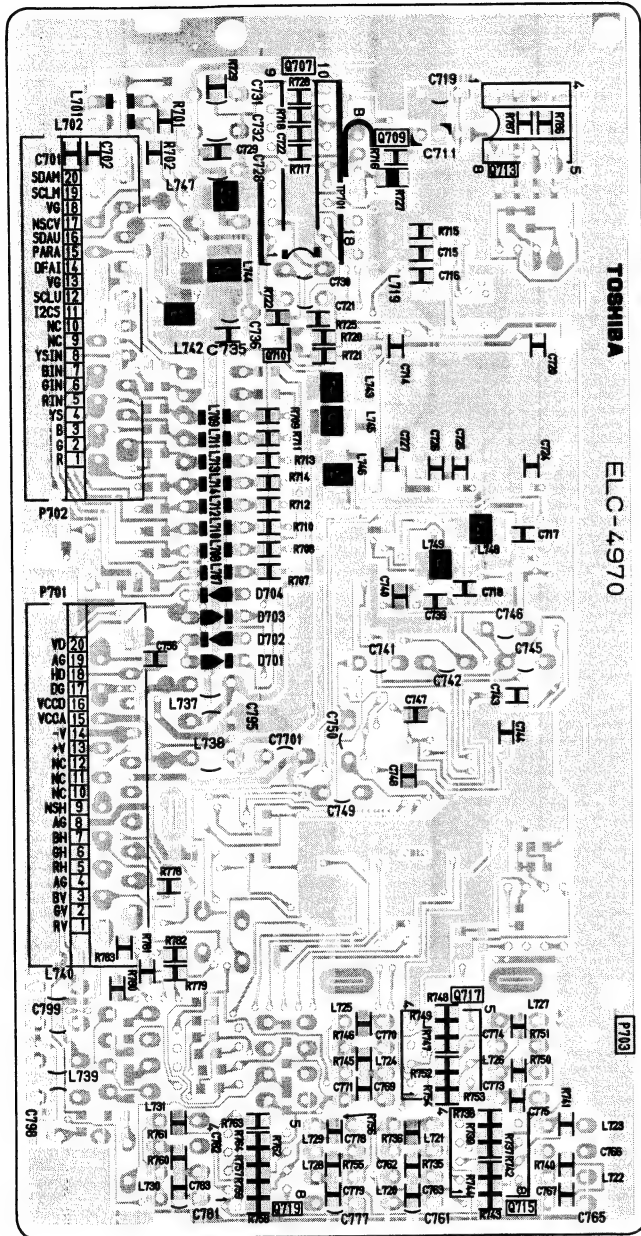


A/V BOARD
BOTTOM (FOIL) SIDE



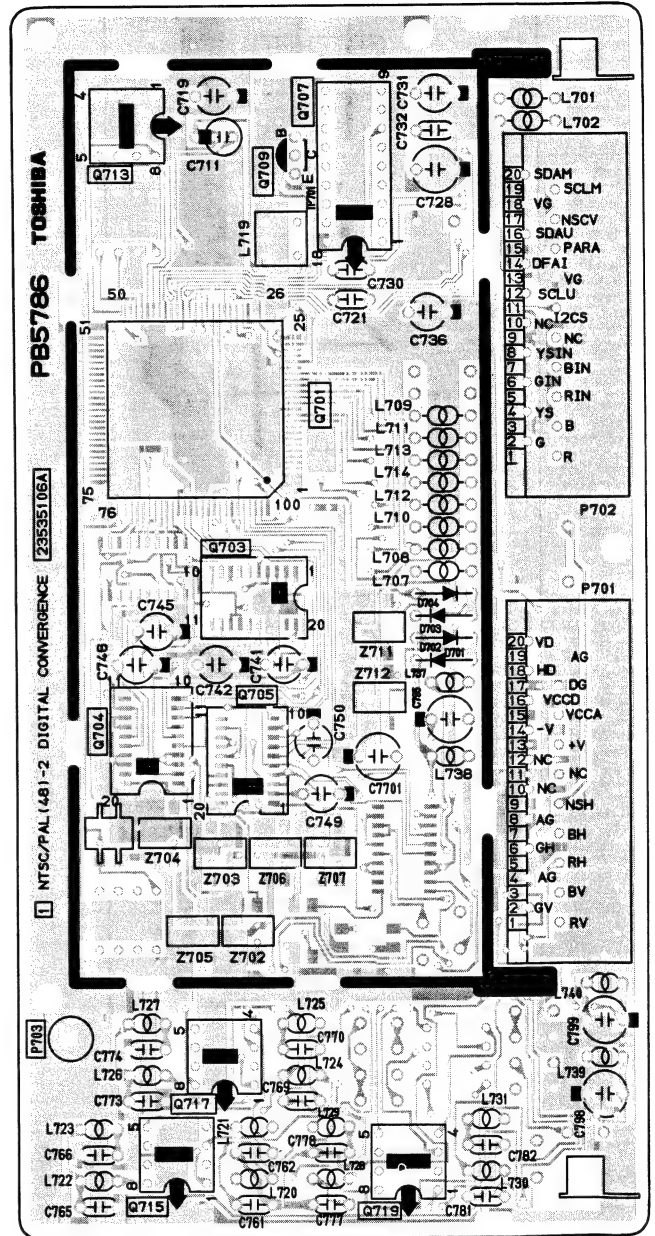
CONV.CONT. BOARD

BOTTOM (FOIL) SIDE



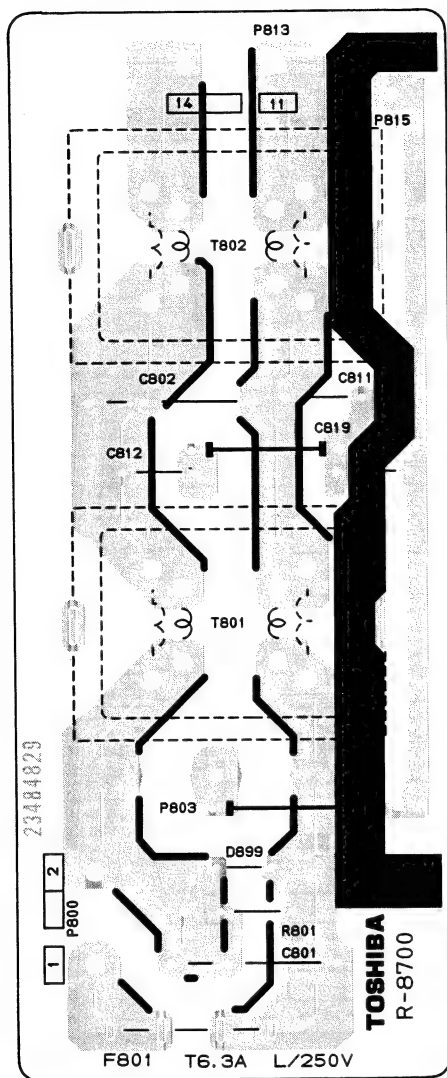
CONV.CONT. BOARD

TOP (PARTS) SIDE



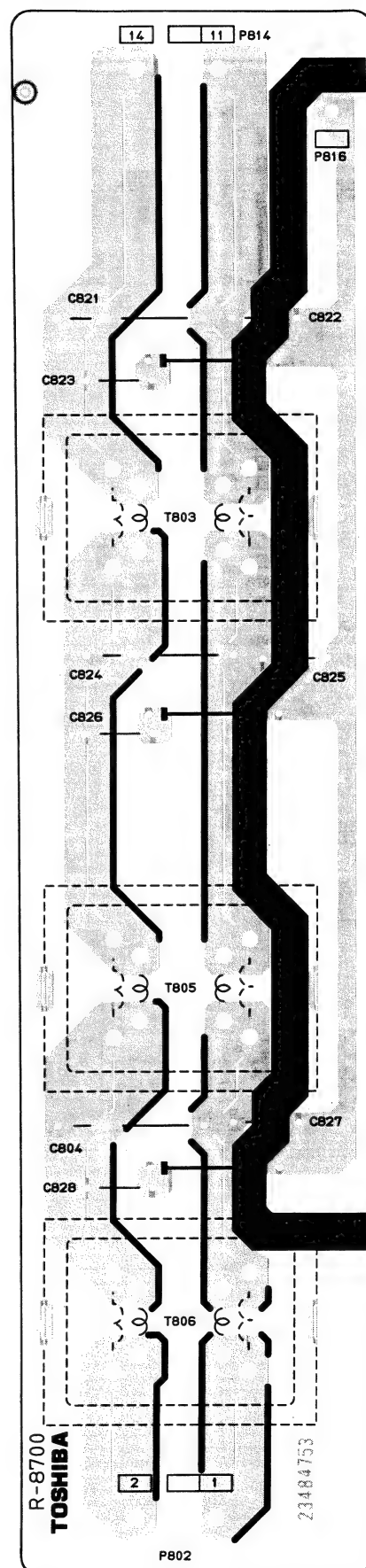
AC IN-1 BOARD

BOTTOM (FOIL) SIDE



AC IN-2 BOARD

BOTTOM (FOIL) SIDE



BOTTOM (FOIL) SIDE

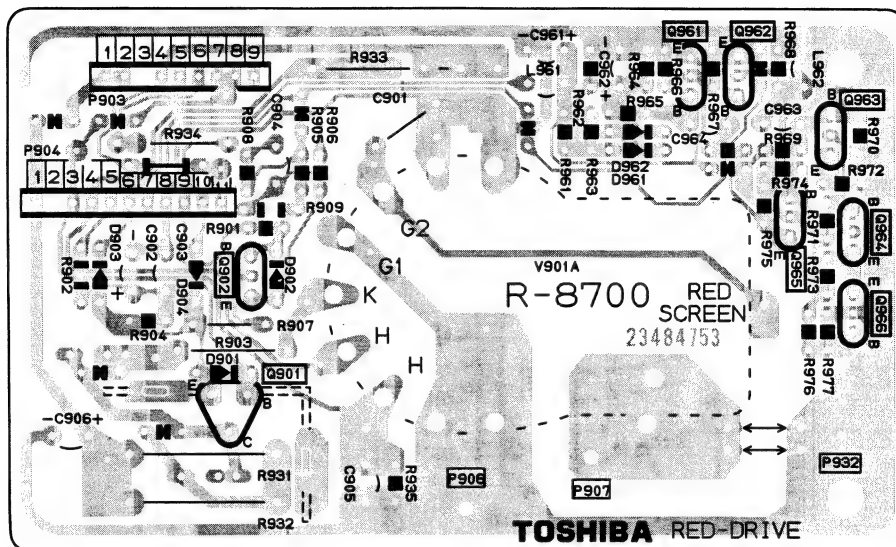


TOP (PARTS) SIDE



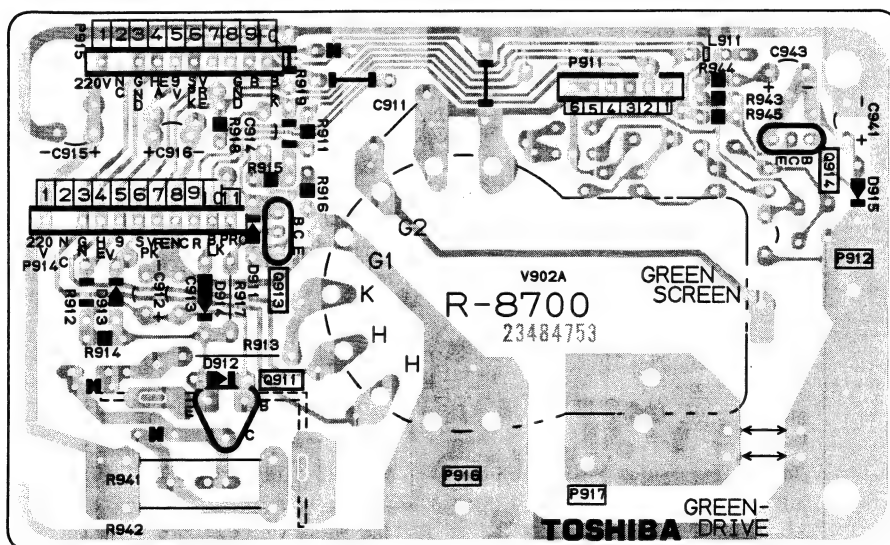
RED DRIVE BOARD

BOTTOM (FOIL) SIDE

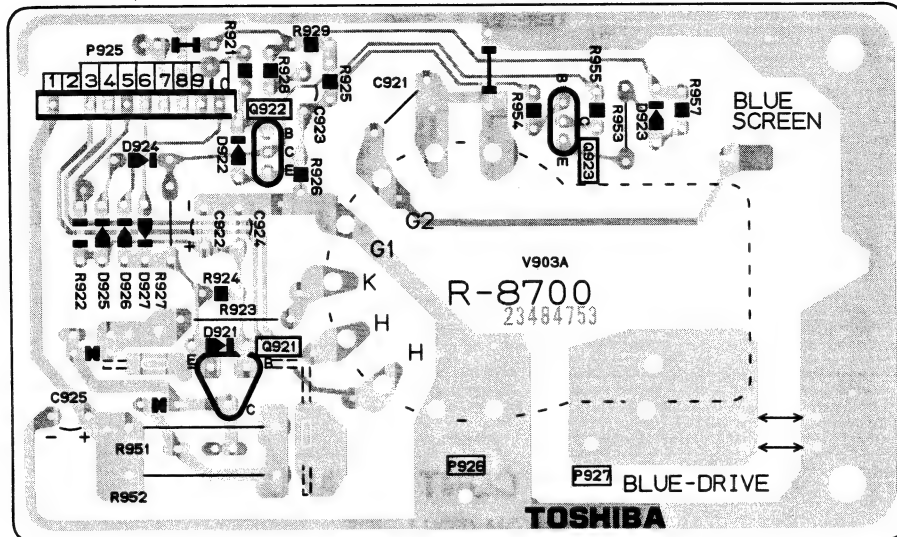


GREEN DRIVE BOARD

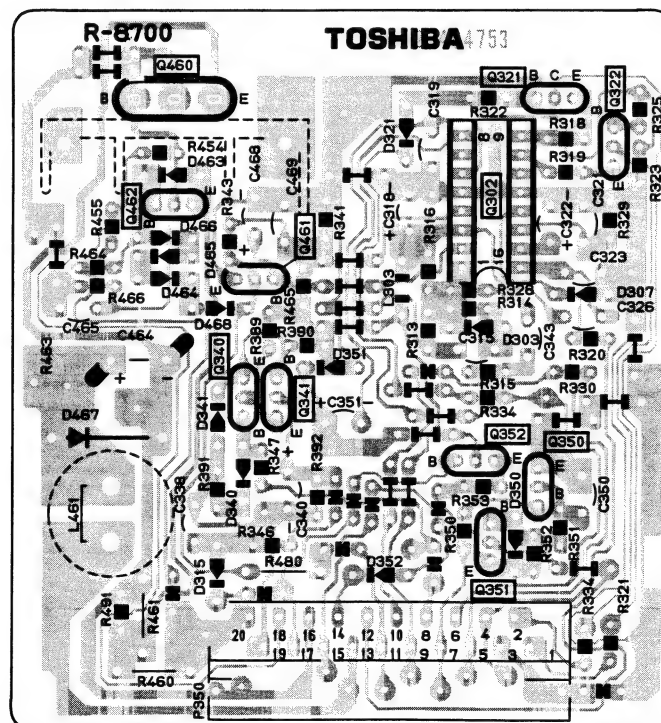
BOTTOM (FOIL) SIDE



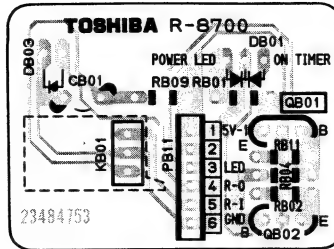
BOTTOM (FOIL) SIDE



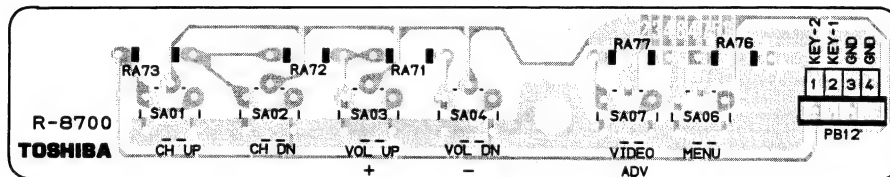
BOTTOM (FOIL) SIDE



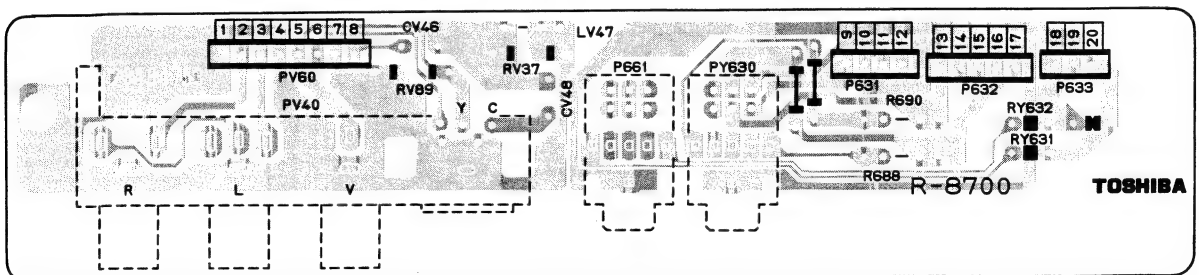
RMT IN BOARD BOTTOM (FOIL) SIDE



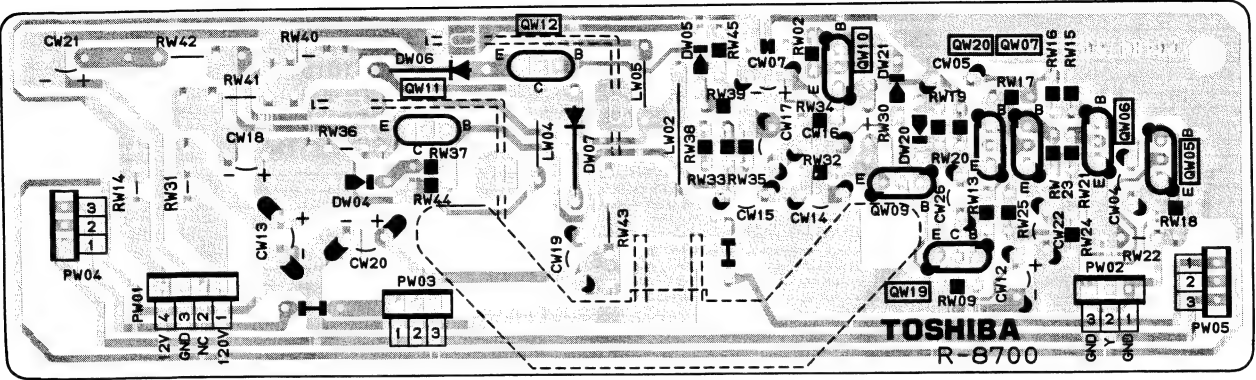
FRONT CONT BOARD BOTTOM (FOIL) SIDE



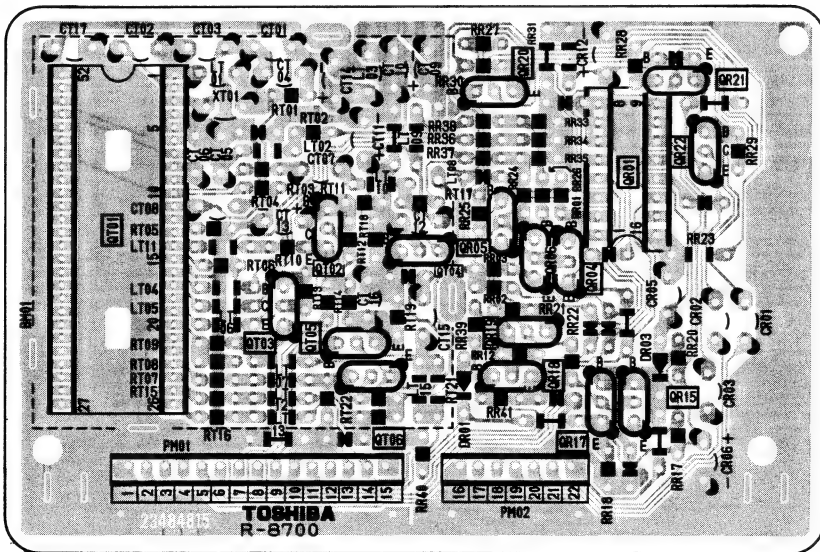
FRONT IN BOARD BOTTOM (FOIL) SIDE



BOTTOM (FOIL) SIDE



BOTTOM (FOIL) SIDE

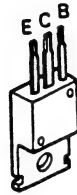


TERMINAL VIEW OF TRANSISTORS

① 2SD1427



② 28B595
2SB834
2SD1052A
2SC1569
2SC2383
2SC2553
2SD525
2SD880



③ 2SA949
2SA1020
2SC752GTM
2SC2230A
2SC2229
2SC2482
2SC2655



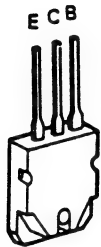
④ 2SA562TM
2SA1015
2SA817
2SC1815
2SC1959
2SC2878
2SC388ATM



⑤ 2SA1026



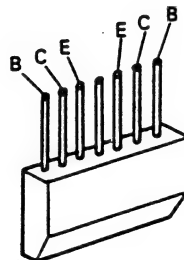
⑥ 2SD1092
2SD1294



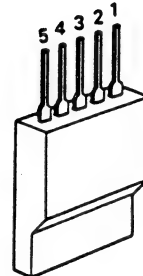
⑦ RN1001
RN1003
RN1004
RN2005
RN1201
RN1202
RN1203
RN1204



⑧ 2SA1349
2SC3381



⑨ D1005T




SCHEMATIC DIAGRAM MODEL: 48PJ5UE,H,C (1/4)

CAUTION: The international hazard symbols "△" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on page 2. Do not degrade the safety of the receiver through improper servicing.

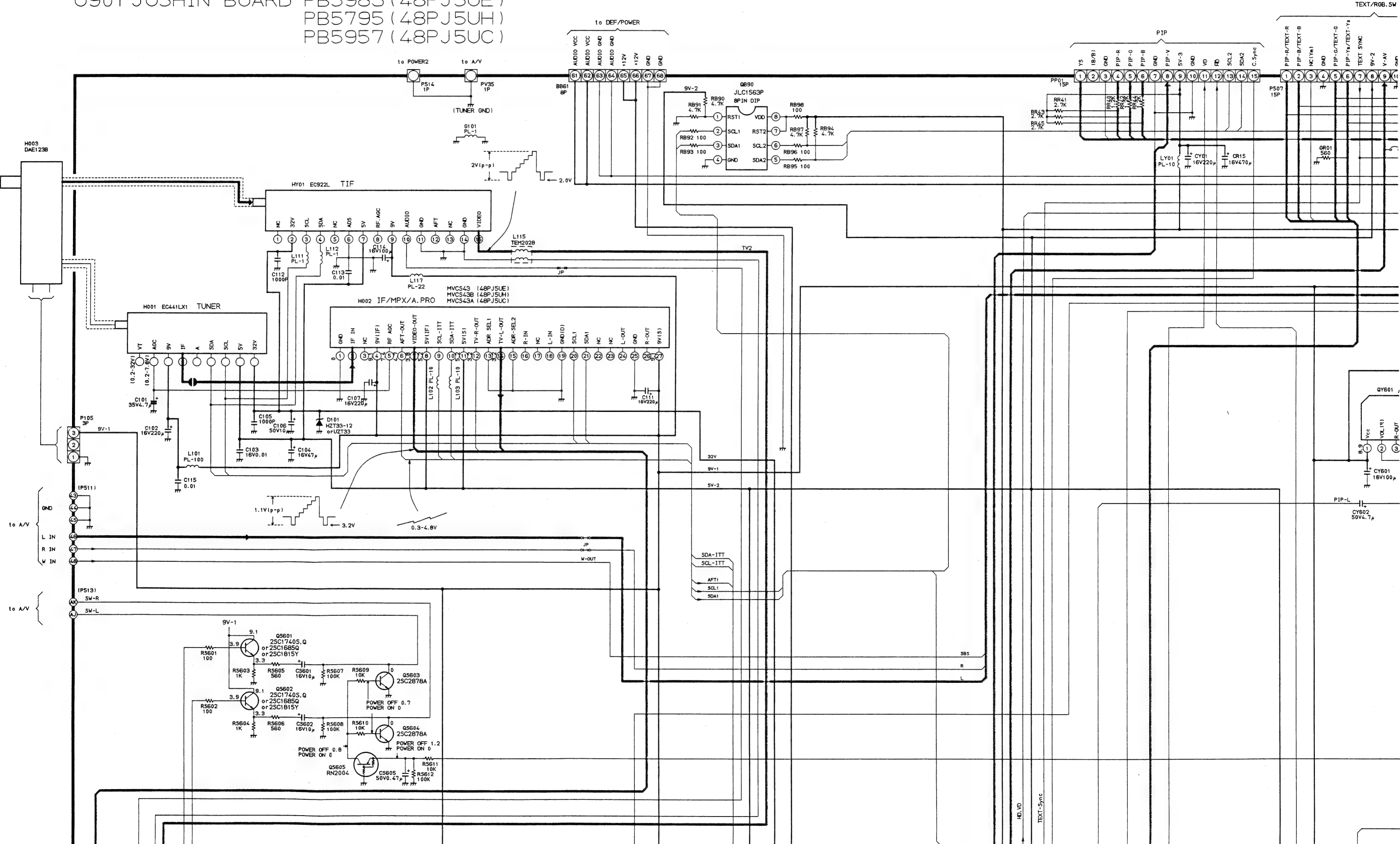
OBSERVATION OF VOLTAGES AND WAVEFORMS

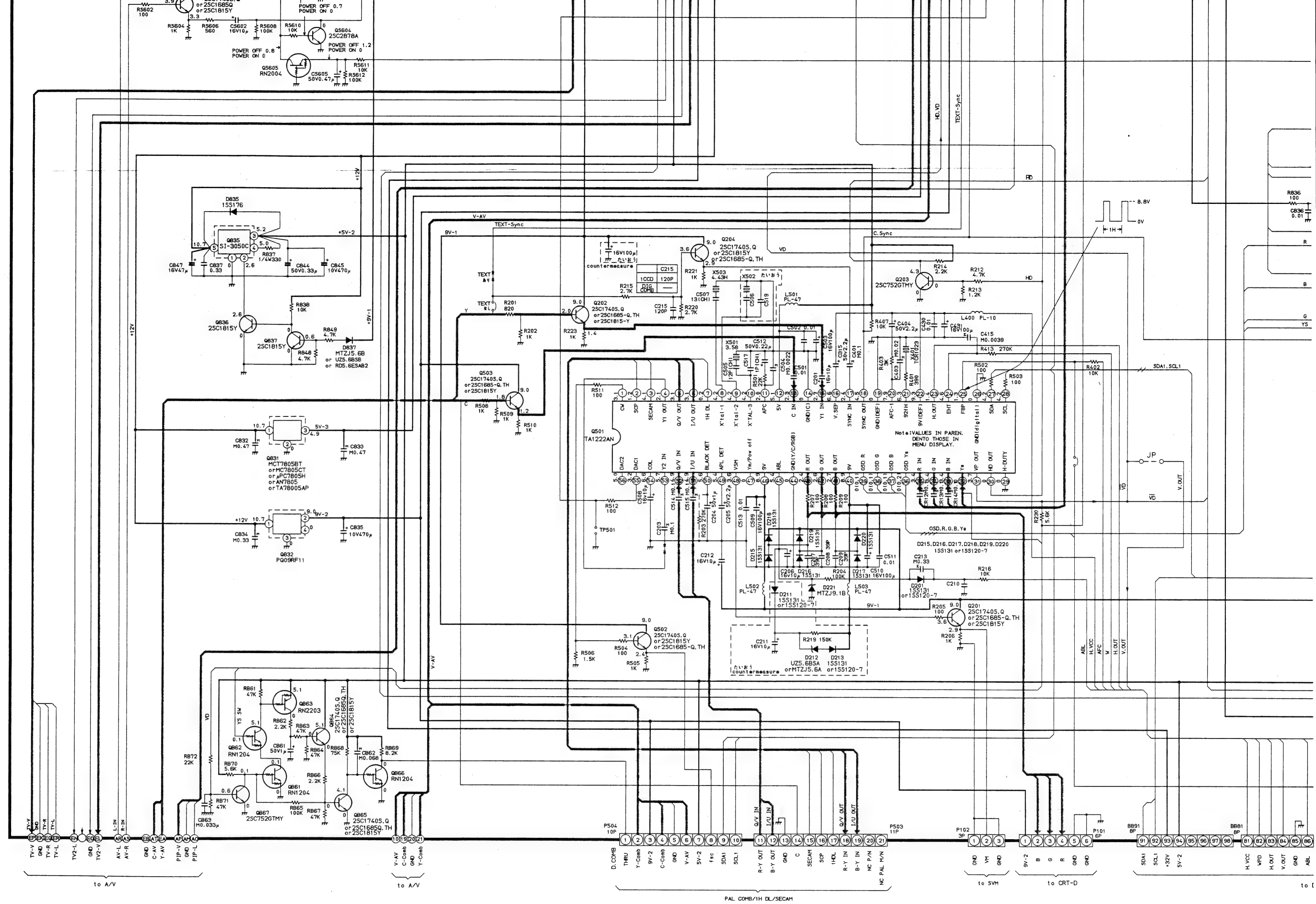
1. Voltages read with VTVM from point shown to chassis ground, line voltage 220 volts, colour bar signal. Voltages reading may vary $\pm 20\%$.
2. All waveforms are taken using a wide band oscilloscope and a low capacity probe.
3. Waveforms are taken using a standard colour bar signal.
4. Make sure that CONTRAST and COLOUR controls are in mid position and BRIGHTNESS control is almost in maximum position. Set other controls for best picture.

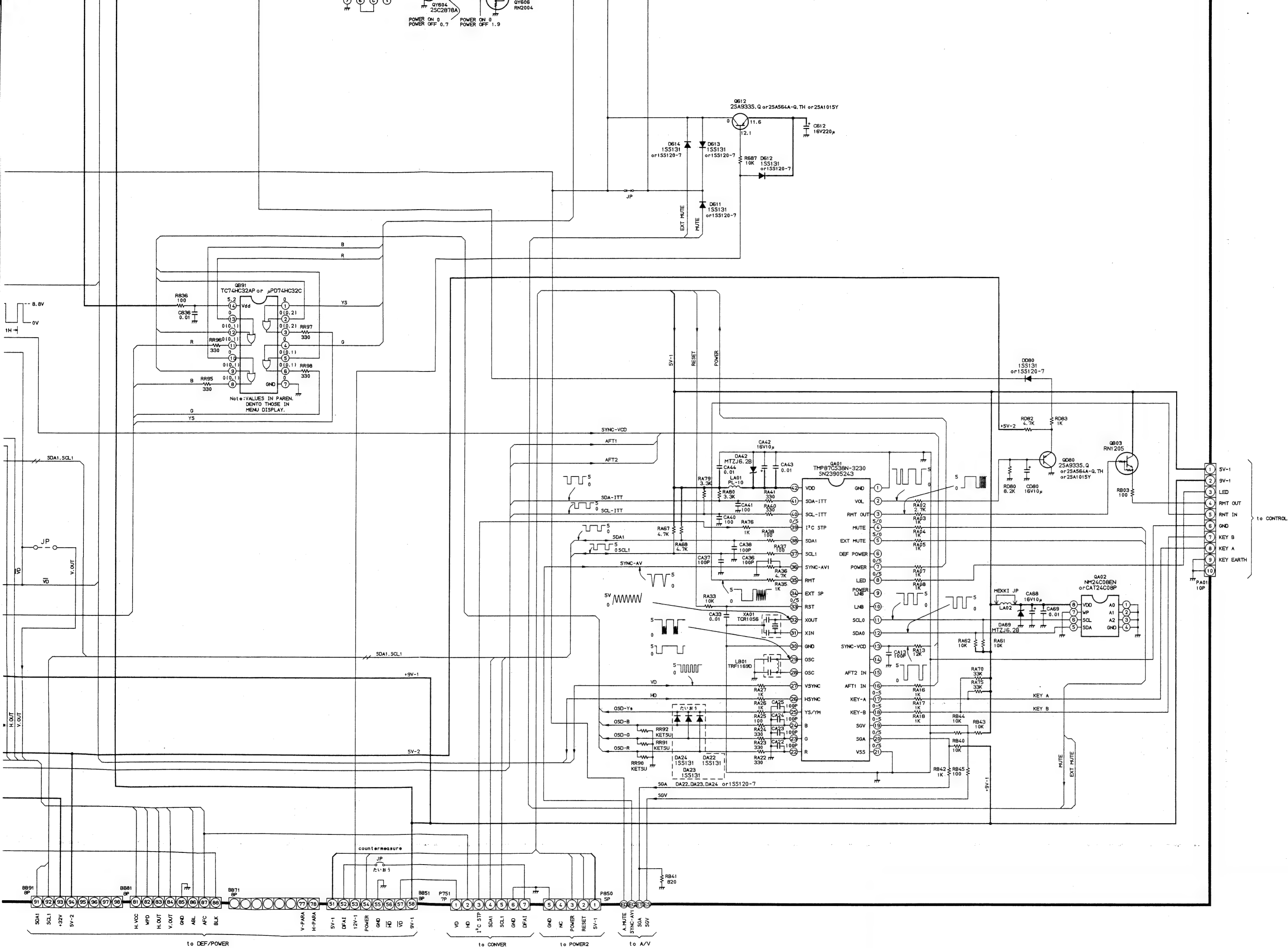
NOTES:

1. D.C. resistance value of a principal tra gram. These are measured for separatec
2. The circuits are subject to change withc
3.  : Solder links.

U901 JUSHIN BOARD PB5983 (48PJ5UE)
PB5795 (48PJ5UH)
PB5957 (48PJ5UC)

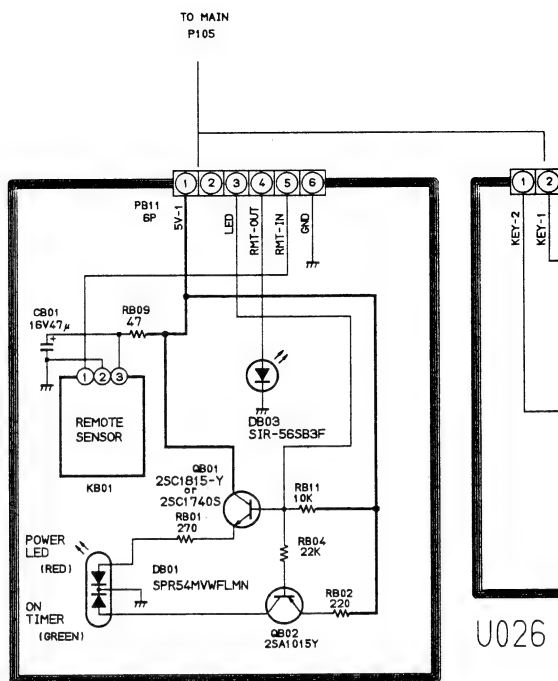
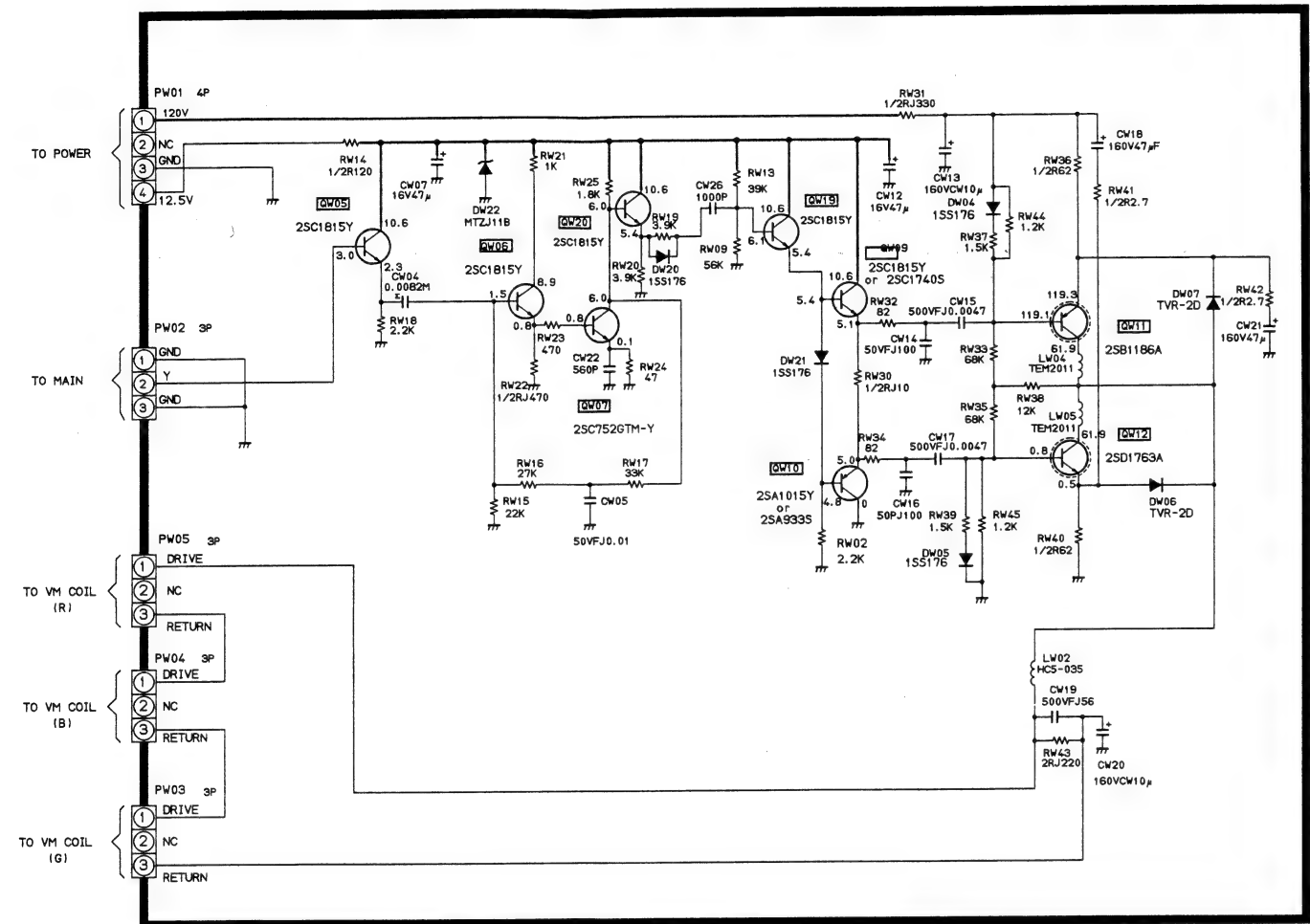




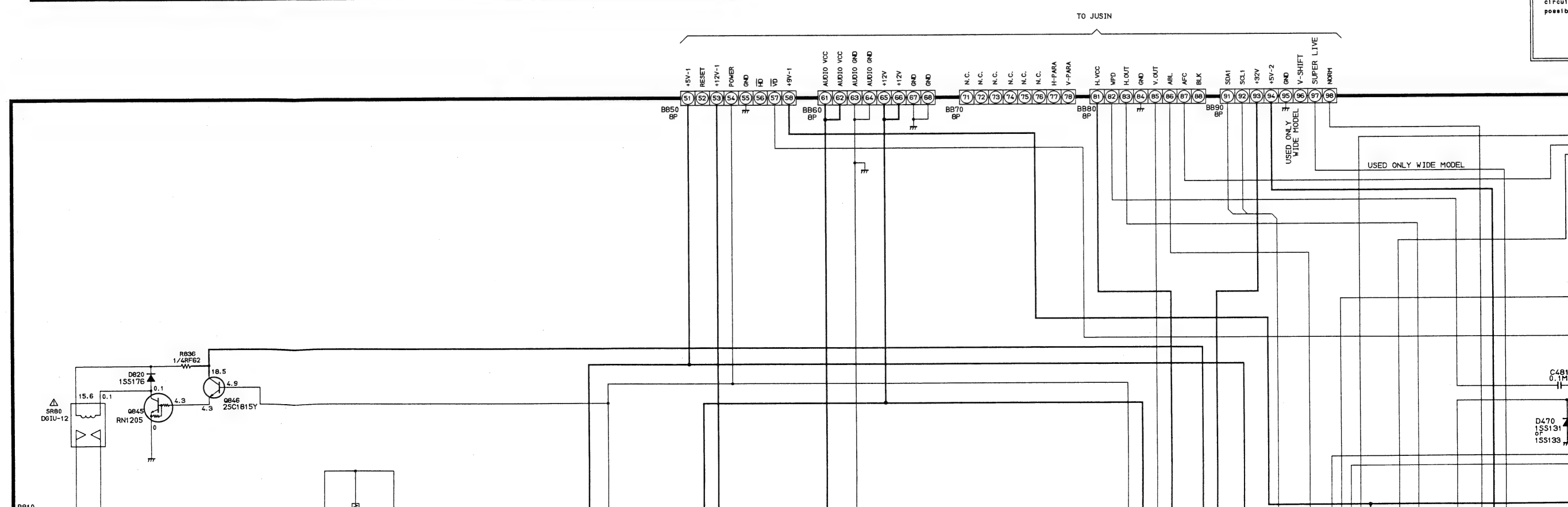


SCHEMATIC DIAGRAM MODEL: 48PJ5UE,H,C (2/4)

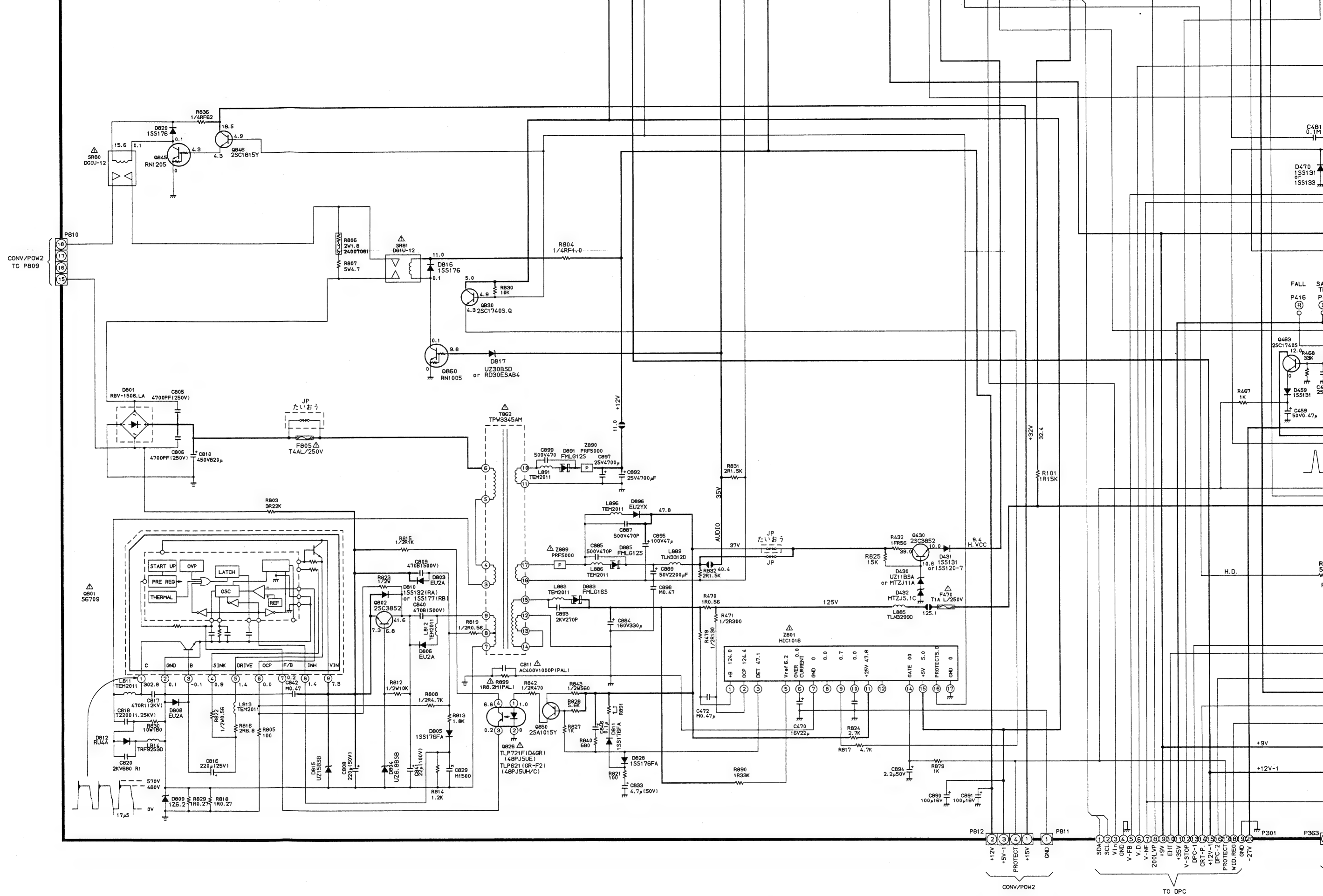
U024 SVM BOARD PB5937-4 (48PJ5UE)
PB5797-4 (48PJ5UH)
PB5934-4 (48PJ5UC)

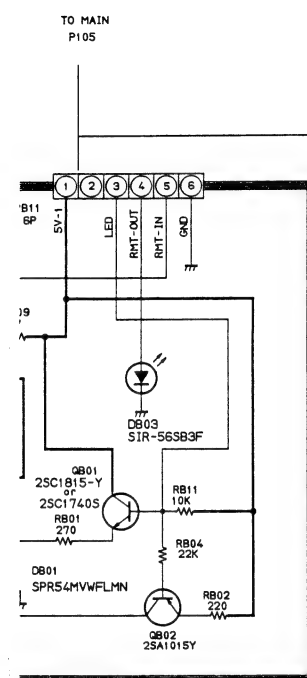


U025 RMT IN BOARD
PB5937-5 (48PJ5UE)
PB5797-5 (48PJ5UH)
PB5934-5 (48PJ5UC)

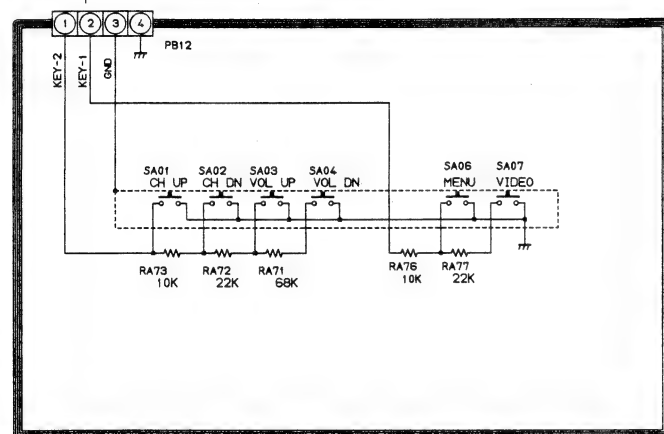


CAUTION
The pro
diagram
circuit
possibl

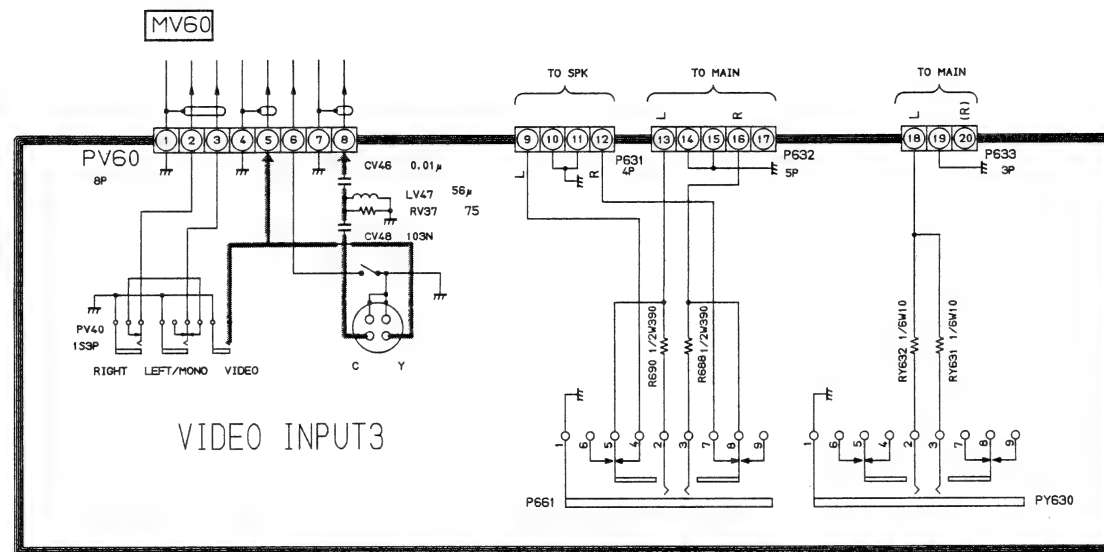




RMT IN BOARD
7-5(48PJ5UE)
7-5(48PJ5UH)
4-5(48PJ5UC)



U026 FRONT CONT BOARD PB5937-6(48PJ5UE)
PB5797-6(48PJ5UH)
PB5934-6(48PJ5UC)



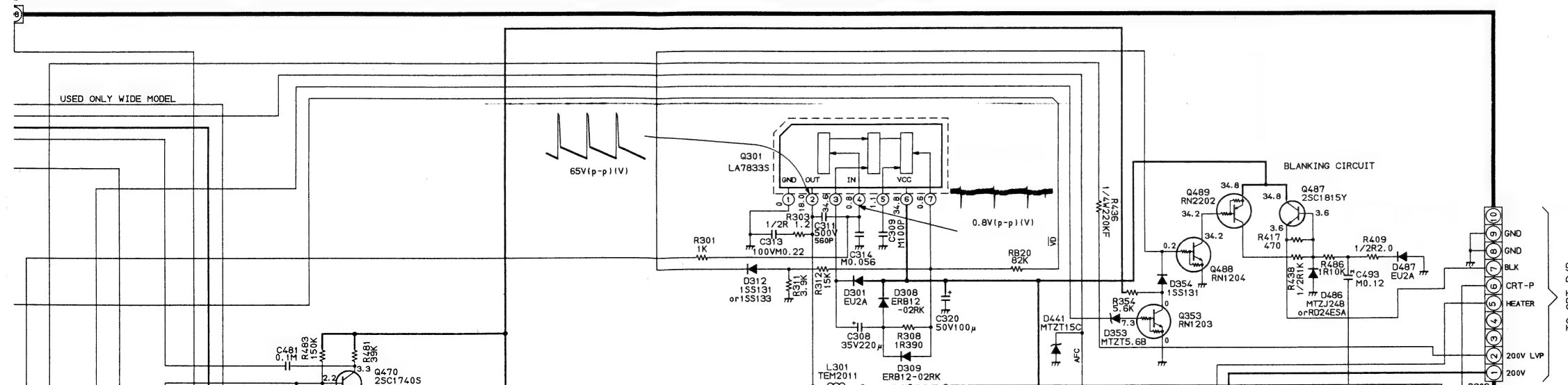
U027 FRONT IN BOARD PB5937-7(48PJ5UE)
PB5797-7(48PJ5UH)
PB5934-7(48PJ5UC)

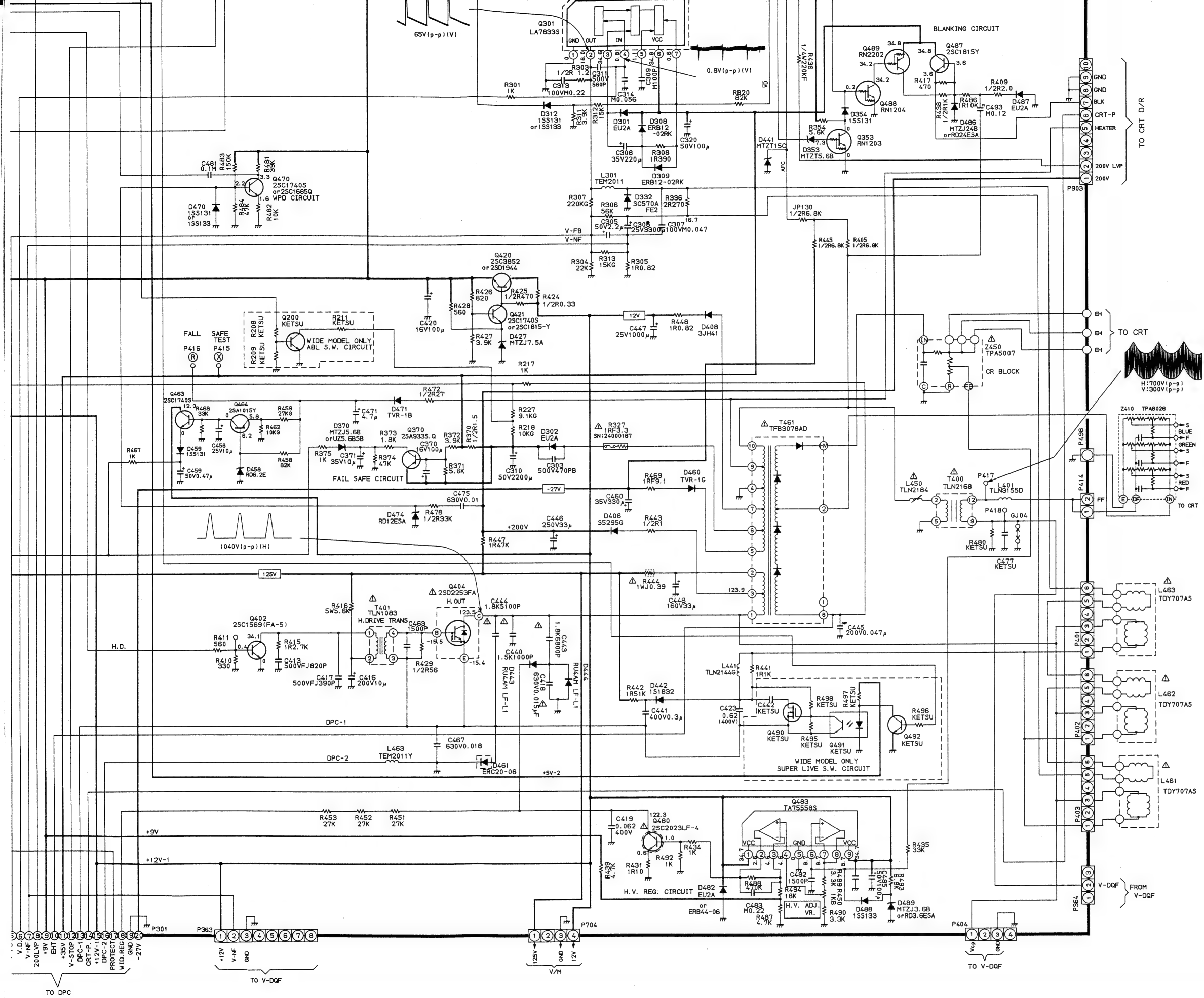
CAUTION

The grounding (⊥ mark) in the schematic diagram is separated from the other circuit ground (⊥ mark) to prevent possible shock hazard.

⊥ : Live ground
⊥ : Isolated ground

U401 POWER/DEF PB5935 (48PJ5UE)
PB5785 (48PJ5UH/C)

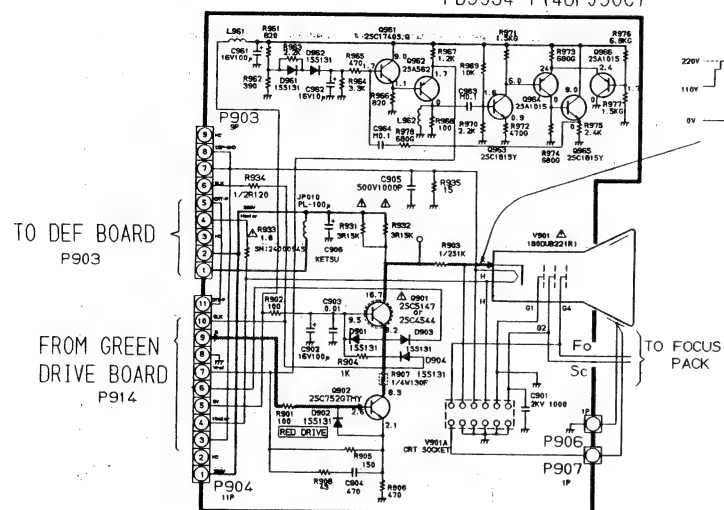




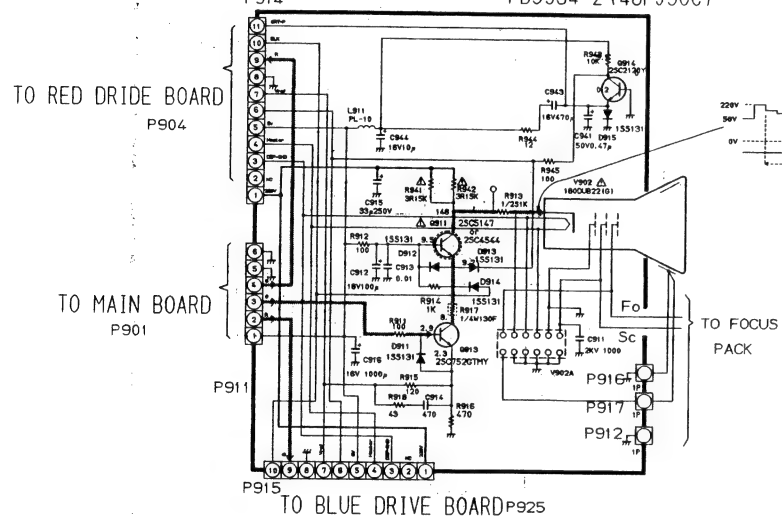
CRT-D

| | | |
|----------|----------|----------|
| 61PJ5UH | 61PJ5UE | 61PJ5UC |
| 55PJ5UH | 55PJ5UE | 55PJ5UC |
| 48PJ5UH | 48PJ5UE | 48PJ5UC |
| (PB5797) | (PB5937) | (PB5934) |

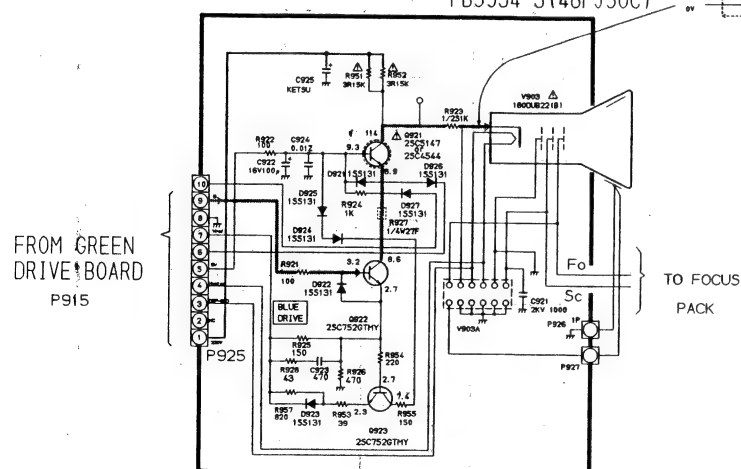
U021 RED DRIVE BOARD PB5937-1 (48PJ5UE)
PB5797-1 (48PJ5UH)
PB5934-1 (48PJ5UC)



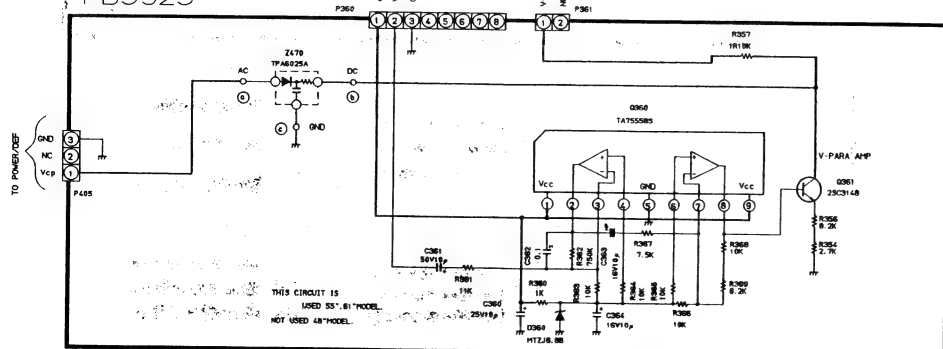
U022 GREEN DRIVE BOARD PB5937-2 (48PJ5UE)
PB5797-2 (48PJ5UH)
P914 PB5934-2 (48PJ5UC)



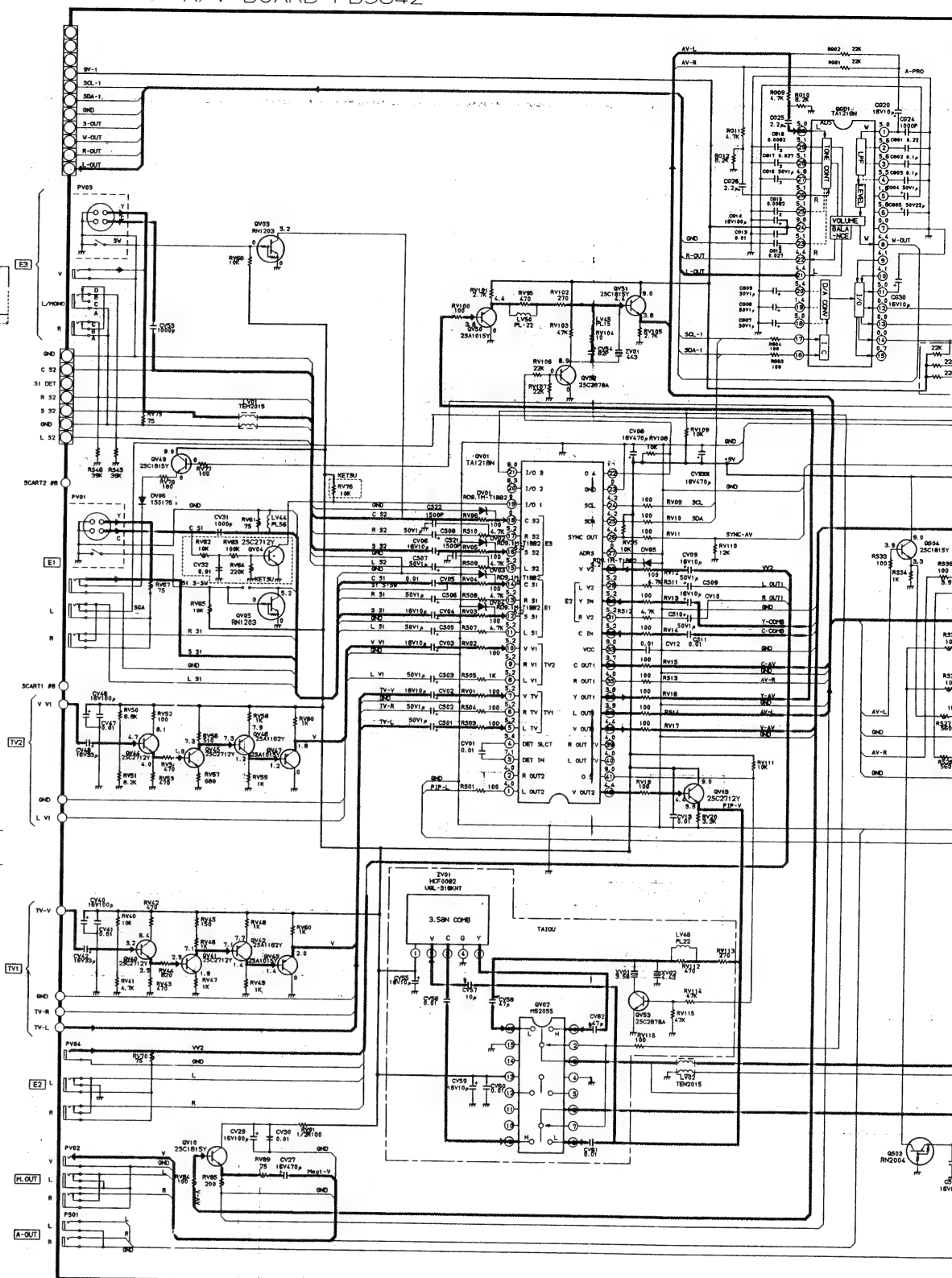
U023 BLUE DRIVE BOARD PB5937-3 (48PJ5UE)
PB5797-3 (48PJ5UH)
PB5934-3 (48PJ5UC)



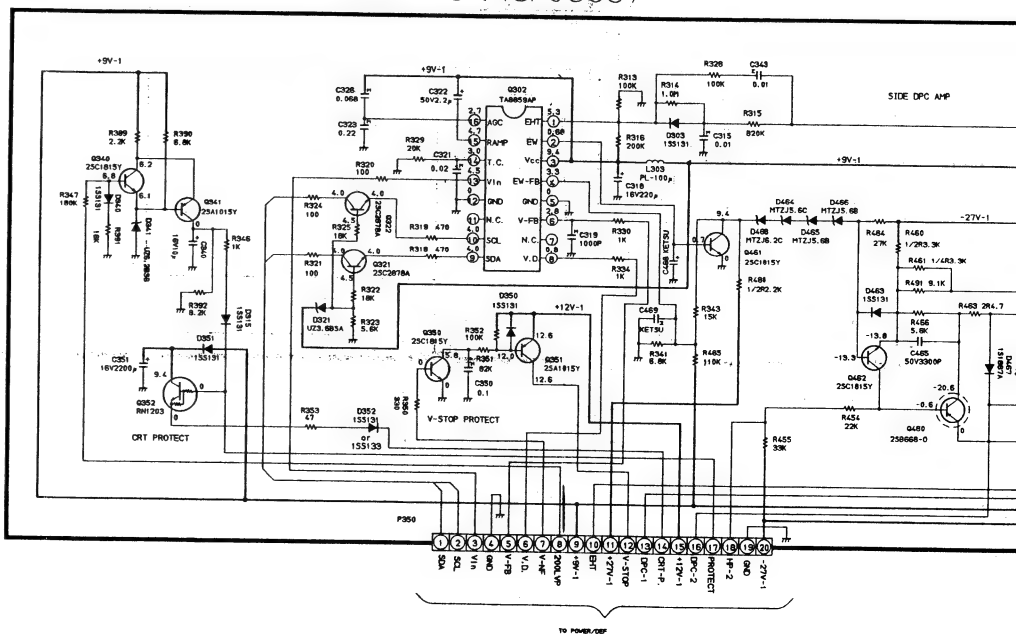
UD01
VERTICAL
DYNAMIC FOCUS
PB5925



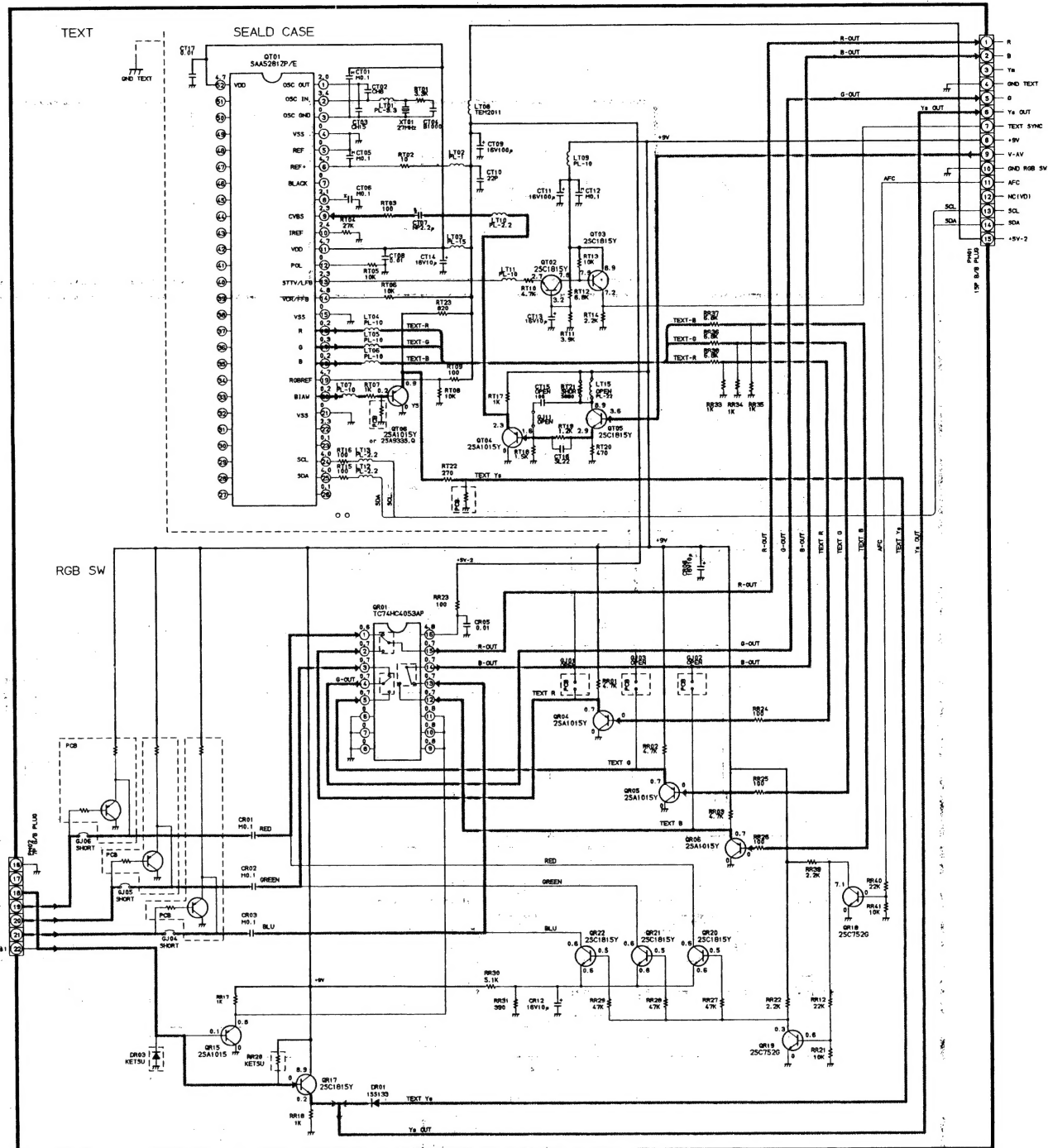
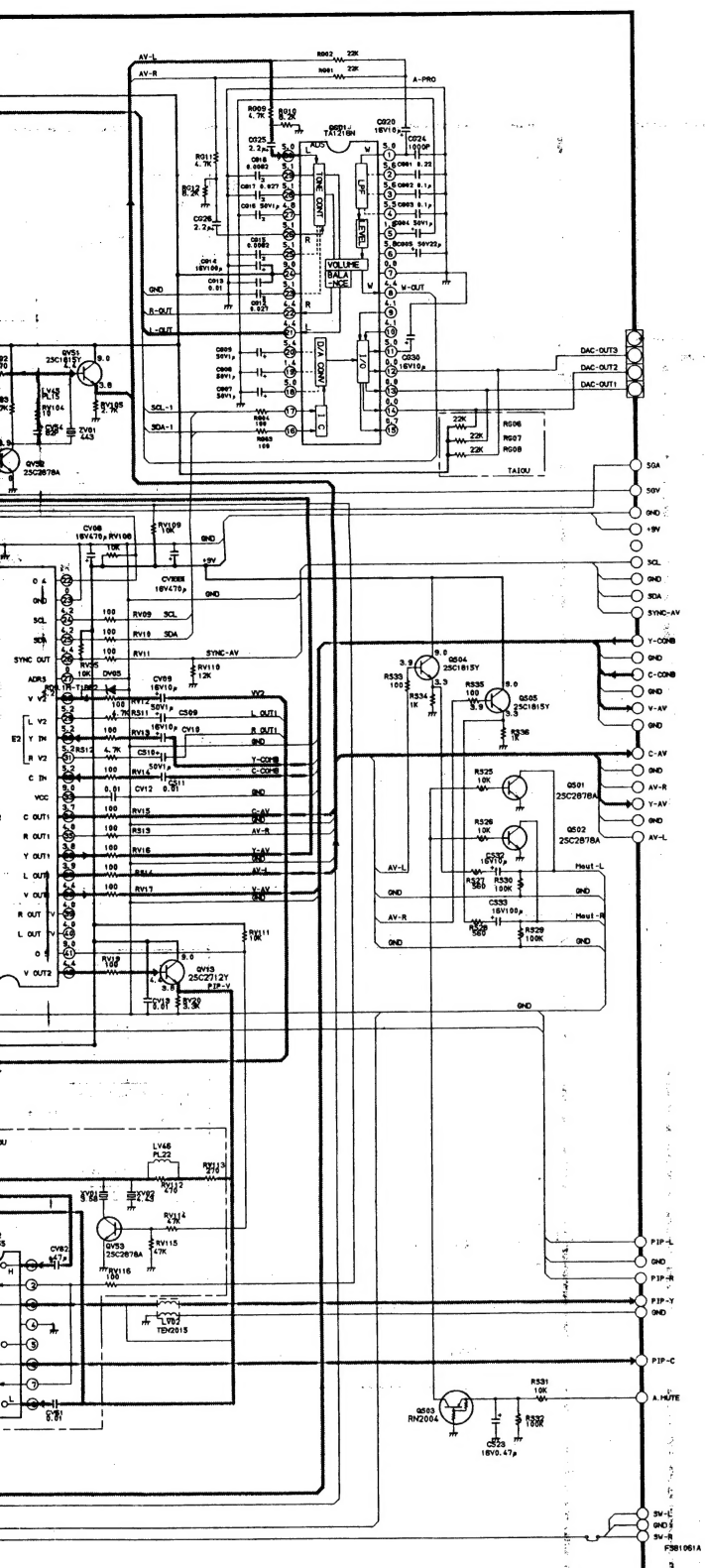
UV01 A/V BOARD PB5842



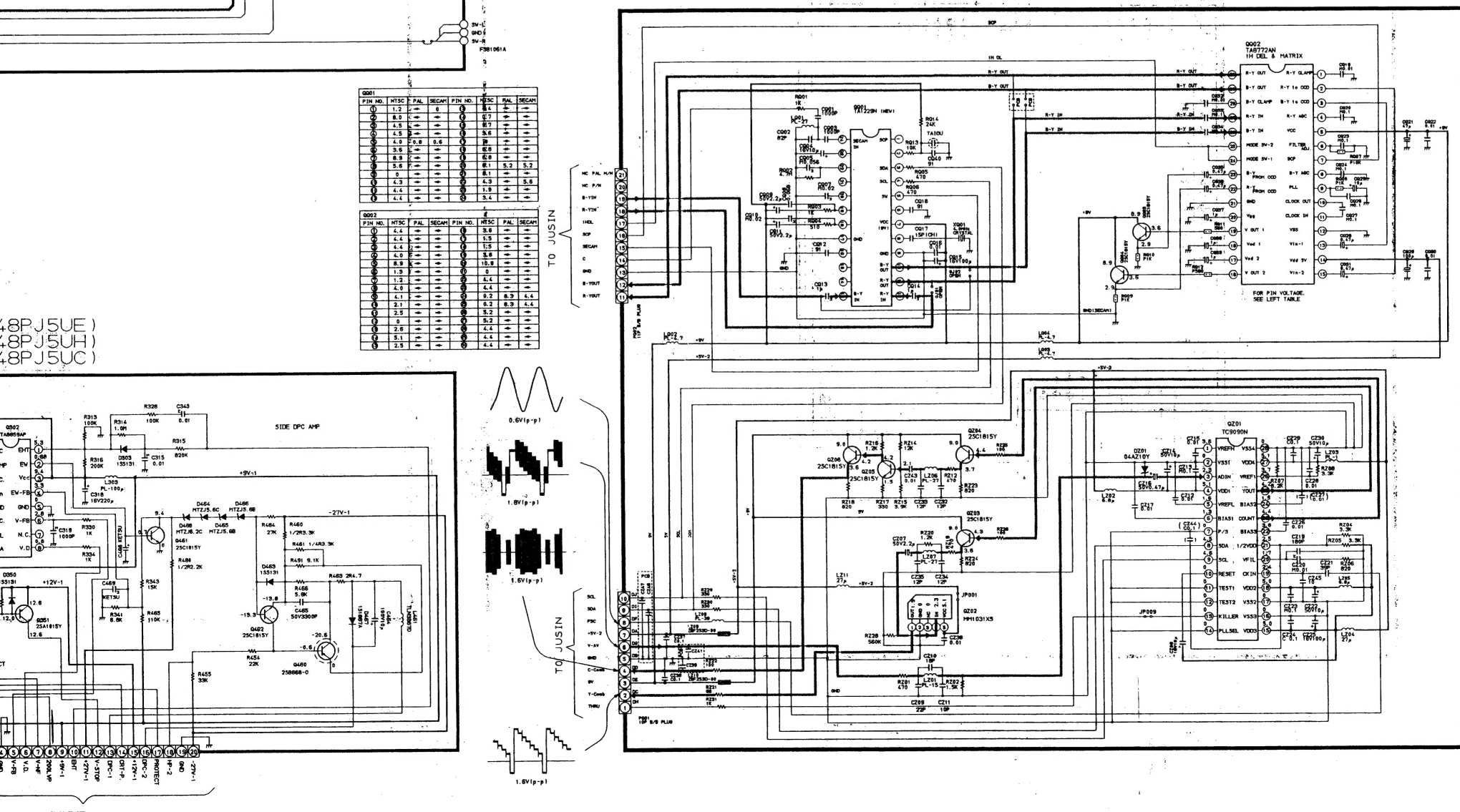
U029 DPC BOARD PB5937-9 (48PJ5UE)
PB5797-9 (48PJ5UH)
PB5934-9 (48PJ5UC)



UM01 TEXT/RGB SW BOARD PB5843



UZ01 COMB/1H DL/SECAM BOARD PB5818

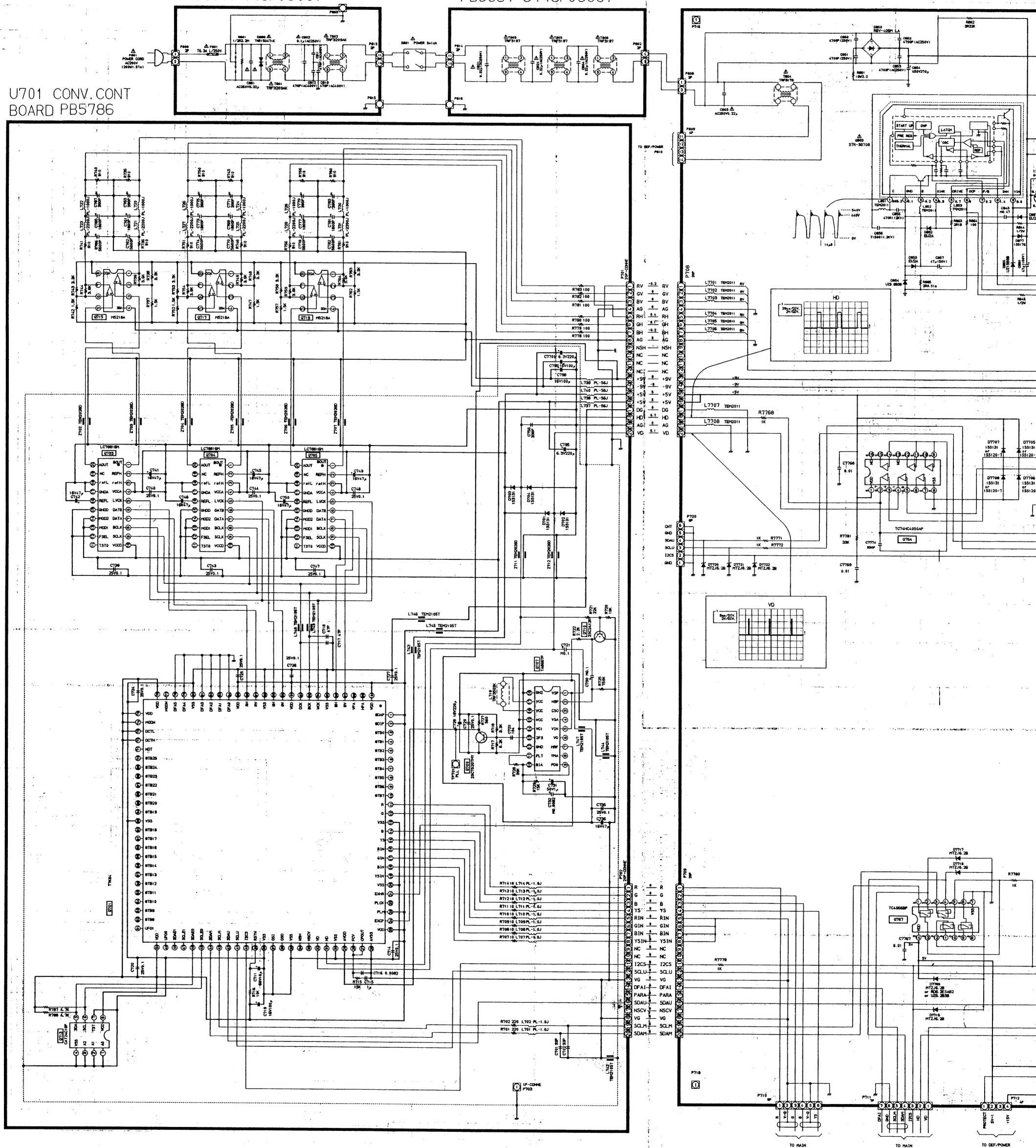


MODEL: 48PJ5UE,H,C (4/4)

U802 AC IN=1
PB6024 (48PJ5UE)
PB6023 (48PJ5UH)
PB6011 (48PJ5UC)

U028-AC-IN-2
PB5937-8 (48PJ5UE)
PB5997-8 (48PJ5UH)
PB5934-8 (48PJ5UC)

U701 CONV.CONT
BOARD PB5786



CAUTION

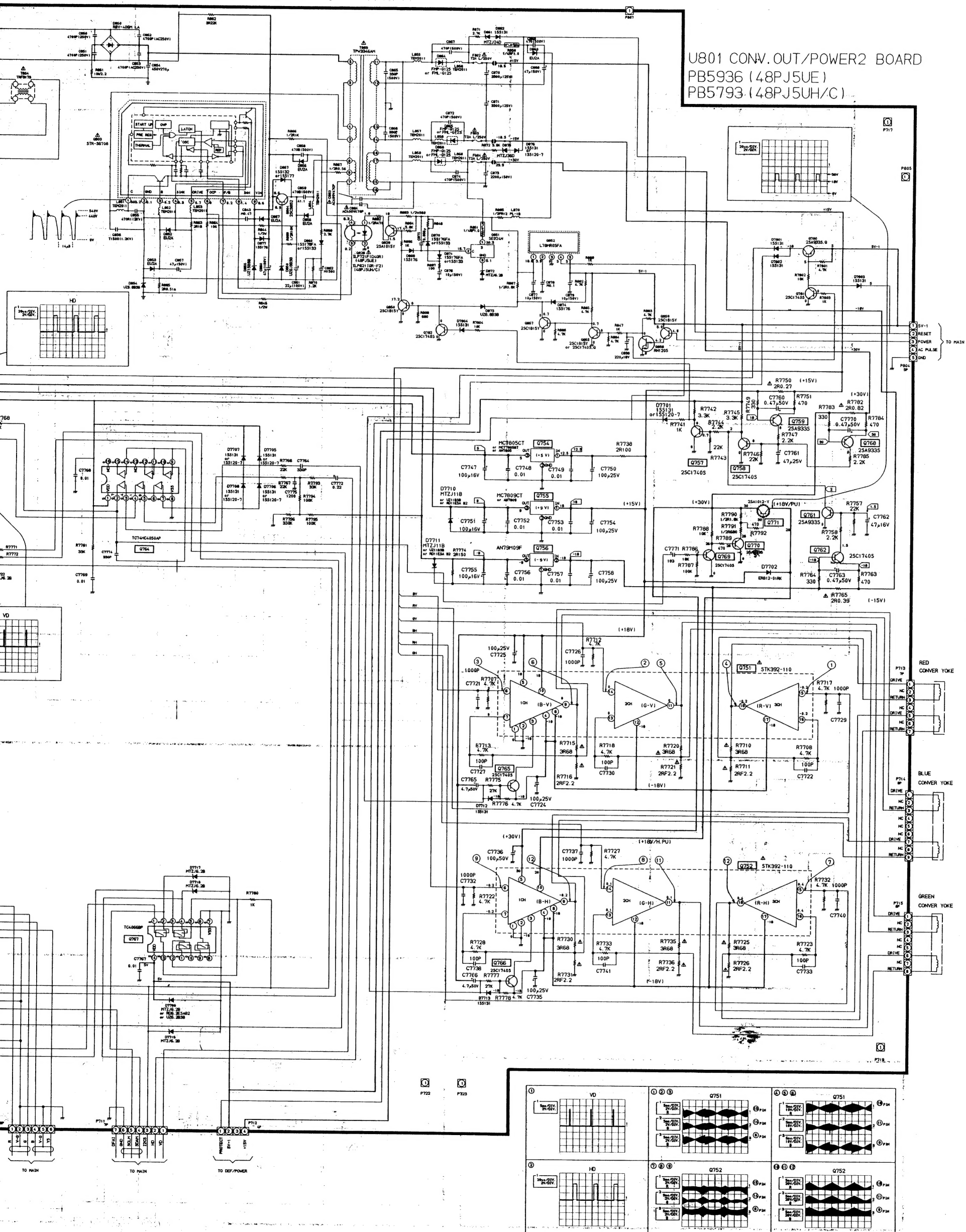
The grounding (⚡) mark in the schematic diagram is separated from the other circuit ground (⏏) symbols to prevent possible shock hazard.

⚡ : Live ground
⏏ : Isolated ground

NOTE: Resistance is shown in ohm (K = 1,000, M = 1,000,000). All resistors are 1/8W and 5% tolerance carbon resistor, unless otherwise noted as the following marks.

| | |
|---|--------------------------|
| 1/2R : Metal or Metal oxide of 1/2 watt | 1/2S : Solid of 1/2 watt |
| 1R5 : Fuse resistor of 1 watt | 1W : Cement of 10 watts |
| K = 10% G = 2% F = 1% | |

2. CAPACITOR Unless otherwise noted in schematic, all capacitor values less than 100 are expressed in pF, and the values more than 1 in μ F.
All capacitors are ceramic 50V, unless otherwise noted as the following marks.
④ Electrolytic capacitor ⑤ Polyester capacitor



SPECIFICATIONS

| | | | | | |
|--|--|----------------|------------------------|--------------|----------------------------|
| Input Power Rating: | 210 W, AC 110 ~ 245 V, 50/60 Hz | | | | |
| Aerial Input Impedance: | 75 ohm unbalanced type for VHF, UHF and CATV | | | | |
| Television System and Channels: | System | Channel | VHF | UHF | CATV |
| | PAL B/G | C.C.I.R | 2 ~ 12 | 21 ~ 69 | X ~ Z + 2, S1 ~ S41 |
| | PAL I | UK | — | 21 ~ 69 | — |
| | PAL D/K | CHINA | 1 ~ 12 | 13 ~ 57 | Z-1 ~ Z-35 |
| | SECAM B/G | C.C.I.R | 2 ~ 12 | 21 ~ 69 | X ~ Z + 2, S1 ~ S41 |
| | SECAM D/K | OIRT | 1 ~ 12 | 21 ~ 69 | — |
| | NTSC M US | US | 2 ~ 13 | 14 ~ 79 | A-6 ~ A-1, A ~ W, AA ~ BBB |
| | NTSC M JAPAN | JAPAN | 1 ~ 12 | 13 ~ 62 | M1 ~ M10, S1 ~ S16 |
| | Special RF Signal: | 4.43NTSC | | Sound system | 5.5/6.0/6.5MHz |
| | Special RF Signal: | PAL 60Hz | | Sound system | 5.5/6.0/6.5MHz |
| Intermediate Frequencies: | Picture I-F carrier frequency | | 38.0 MHz | | |
| | Sound I-F carrier frequency | | 33.5 MHz (4.5 MHz M) | | |
| | | | 32.5 MHz (5.5 MHz B/G) | | |
| | | | 32.0 MHz (6.0 MHz I) | | |
| | | | 31.5 MHz (6.5 MHz D/K) | | |
| Colour System: | PAL / SECAM / 4.43 NTSC / 3.58 NTSC | | | | |
| Screen Size: | Type 48 | | | | |
| Sound Output: | 14W + 14W | | | | |
| Speakers: | 160 mm x 160 mm, 2 pcs | | | | |
| Aux. Terminals: | Headphone Jack, S-VIDEO socket, VIDEO/AUDIO input socket, MONITOR output socket | | | | |
| Dimensions: | Height | | 1254 mm | | |
| | Width | | 1046 mm | | |
| | Depth | | 499 mm | | |
| Mass: | 85 kg | | | | |
| Features: | Projection TV, Picture in Picture, NICAM and German stereo, ON/OFF-timer, No signal off, Blue back screen, TV Games, MULTI Language OSD, TELETEXT (48PJ5UE only) | | | | |

Specifications are subject to change without notice.